THE SECRETARY OF HEALTH AND HUMAN SERVICES
WASHINGTON, D.C. 20201

APR 16 1985

The Honorable Thomas P. O'Neill, Jr.
Speaker of the House of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

Enclosed is the report of the Skilled Nursing Facility Benefit Under Medicare. This Report to Congress was written in partial response to Section 101 of P.L. 97-248, the Tax Equity and Fiscal Responsibility Act of 1982 to Section 605 of P.L. 98-21, the Social Security Amendments of 1983 and to Section 2319(b) of the Deficit Reduction Act of 1984. This report provides a detailed analysis of the Medicare SNF benefit, analyzes the structure of this industry, discusses the development of a Medicare SNF casemix measure, and analyzes the differences between hospital-based and freestanding SNFs. This report also addresses the reimbursement issues involved in the Medicare SNF benefit; however, as required by the 1984 Deficit Reduction Act, specific SNF payment reform proposals will be forwarded to the Congress in a separate report.

In preparing this Report, the Department conducted a thorough analysis of internal administrative data on Medicare SNF patients and participating facilities, reviewed the existing literature on casemix and costs in nursing homes, and commissioned four outside studies to assess the casemix differences between hospital-based and freestanding SNFs. The Department has also benefited from discussions with members of Congress, Congressional staff, and representatives of the health care industry and consumer groups. The results of the research in the Report represent the most complete picture of the Medicare SNF industry available to date.

Sincerely,

Margaret M. Heckler

Margaret M. Heckler
Secretary

Enclosure

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The Honorable George Bush
President of the Senate
Washington, D.C. 20515

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Secretary

Enclosure

REPORT TO CONGRESS:

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STUDY OF THE SKILLED NURSING FACILITY BENEFIT UNDER MEDICARE

Health Care Financing Administration
U.S. Department of Health and Human Services
Office of Policy Analysis

January 1985

ACKNOWLEDGEMENTS

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STUDY OF THE SKILLED NURSING FACILITY BENEFIT UNDER MEDICARE

EXECUTIVE SUMMARY

This Report responds to a congressional mandate concerning the Medicare skilled nursing facility benefit. First, the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) required the Department of Health and Human Services to develop proposals providing for prospective payment for Medicare providers, including skilled nursing facilities (SNFs). Second, the Social Security Amendments of 1983 included a requirement that the Department study the effect of implementing the 1982 TEFRA provision requiring single payment limits for both Medicare freestanding and hospital-based SNF services based on the cost experience of freestanding facilities. Third, the Deficit Reduction Act of 1984 reiterated Congress' interest in the studies specified by TEFRA and the 1983 Social Security Amendments and provided, further, that the Department should report on the range of options for prospective payment of skilled nursing facilities under Medicare. This report provides a detailed analysis of the Medicare SNF benefit, analyzes the structure of this industry, discusses the development of a Medicare SNF casemix measure, and analyzes the differences between hospital-based and freestanding SNFs. This report also addresses the reimbursement issues involved in the Medicare SNF benefit; however, as required by the 1984 Deficit Reduction Act, specific SNF payment reform proposals will be forwarded to the Congress in a separate report.

Prepared by George Schieber, Joshua Wiener, Korbin Liu, and Pamela Doty, Office of Policy Analysis, Health Care Financing Administration.

Background and Context

The Medicare skilled nursing benefit covers short-term (no more than 100 days), post-acute care for persons needing skilled nursing or rehabilitative services in an inpatient setting. The Medicare SNF benefit as mandated by statute sets specific and relatively stringent requirements regarding the level of skilled care necessary for Medicare coverage of SNF services. Hence, Medicare covered SNF care differs from the long term care covered by the Medicaid nursing home benefit. In 1980 the average Medicare coverage of a SNF stay was 30 days, much less than the average stay of 456 days for all nursing home patients.

The Medicare SNF benefit is relatively small both as a percentage of Medicare expenditures and as a proportion of total national nursing home revenues. The $529 million spent for Medicare SNF benefits in calendar year 1983 constituted slightly less than one percent of total Medicare expenditures and slightly less than two percent of all nursing home expenditures. On the other hand, in 1983 about 31 percent of Medicaid expenditures were for nursing home care (skilled nursing and intermediate care facilities), and Medicaid accounted for nearly 50 percent of all nursing home expenditures.

Currently, Medicare services in skilled nursing facilities are reimbursed on a retrospective reasonable cost basis, subject to limits applied to routine costs (e.g., nursing, meals). Ancillary costs such as physical therapy and drugs and capital are not included in the cost limits. The limits are set at 112 percent of the average costs of urban and rural facilities. Prior to October 1, 1982, separate limits were in effect for hospital-based and freestanding facilities. TEFRA eliminated these dual cost limits, mandating single limits based on the lower costs of the freestanding

facilities subject to such adjustments as the Secretary deems appropriate. The Deficit Reduction Act extended the pre-TEFRA dual limits to July 1, 1984. After July 1, 1984, reimbursement limits for urban and rural hospital-based SNFs respectively, would be set at the corresponding limits for freestanding SNFs plus 50 percent of the amount by which 112 percent of the hospital-based SNF costs exceeded the limit for freestanding SNFs.

As with all benefits under Medicaid, States are free to establish their own payment systems. As a result, there is considerable variation in SNF reimbursement methods under Medicaid. In constrast to Medicare's retrospective reimbursement system, 37 States employ various forms of prospective payment. Only 10 States use a retrospective system similar to Medicare's. Three States use a method that combines various approaches.

Statistics on Medicare SNFs

A nursing home can be certified in whole or in part to participate in Medicare, Medicaid, or both programs. About 5,000 nursing homes are certified to provide Medicare services, about two-thirds of all SNFs. Approximately two-thirds of all Medicare certified SNFs are proprietary (for profit), with the rest about evenly split between government and non-profit facilities. Sixty-seven percent of the 5,000 Medicare certified facilities are urban and freestanding. For participating SNFs, Medicare accounts for an average of 14 percent of patient days. However, less than 400 SNFs provide 40 percent of total Medicare days; these facilities are highly dependent on Medicare patients. The vast majority of certified SNFs provide very few Medicare days.

The approximately 500 hospital-based facilities are evenly divided between urban and rural locations. Hospital-based facilities tend to provide proportionately more care to Medicare beneficiaries than freestanding SNFs, accounting for 20 percent of total days while supplying only 10 percent of certified beds.

The availability of Medicare certified SNF beds in all types of facilities varies across States. In FY 1981, Medicare SNF beds per 1000 elderly varied from a low of 1 in Arkansas and Oklahoma to a high of 51 in North Dakota; the national mean was 18. The use rate of the Medicare SNF benefit also varied across States from a low of one day of Medicare covered SNF care per 1000 elderly in Wyoming to a high of 635 in Kentucky; the national mean was 310.

The average total cost per day for Medicare SNF services was $80 in FY 1983, of which 72 percent was for routine operating costs, 22 percent for ancillary costs, and 6 percent for capital costs. Nonprofit and urban homes are more expensive than proprietary and rural facilities. Hospital-based facilities are twice as expensive as freestanding facilities, $95 and $48 per day, respectively. However, hospital-based and freestanding SNFs in rural areas are more similar in costs than they are in urban localities.

In a multivariate regression analysis, facility characterisitics (e.g., ownership hospital-based/freestanding, facility size) explained about half of the facility variation in routine operating costs. Two proxy measures of casemix, proportion of Medicare days to total patient days and total admissions per bed, are associated with higher costs.

Reimbursement Issues in the Current System

The current retrospective, reasonable cost reimbursement system contains no incentives for facilities to admit Medicare or heavy care patients. Moreover, SNFs with costs above the reimbursement limits set by statute have strong incentives to reduce costs by admitting patients who require less care. In addition, it is often believed that, because of certain characteristics of the current reimbursement system, facilities decline to participate in Medicare, creating inadequate access and costly hospital back-up of patients awaiting nursing home placements. Three frequently noted deficiencies of the current system are: 1) the lack of financial incentives to curb costs and to increase efficiency; 2) excessive federal reporting requirements; and 3) financial uncertainty created by retrospective payment adjustments.

A prospective payment system has been advocated as a means to increase SNF participation in the Medicare program. Increased SNF participation potentially could increase the use of Medicare SNF services and decrease the number of hospital patients awaiting SNF placements. This would allow the patient to move through the system and be cared for at the medically necessary level. A prospective payment system with incentives to take Medicare patients could promote access for Medicare beneficiaries.

There are strong indications, however, that local or regional factors greatly influence access to and use of Medicare SNF services. For example, States with Medicaid reimbursement systems providing strong incentives for nursing homes to become certified as intermediate care facilities (ICFs) tend to have nursing home industries that are predominantly ICF oriented. (Intermediate care is a lower level

of care than skilled care which is not covered by the Medicare program.) Since Medicare constitutes such a small share of the overall market, it has little leverage to affect the availability of SNF level nursing home care. Other local and regional factors that affect Medicare SNF participation and the use of Medicare SNF services are variations in local medical practice patterns, the availability of home health services as an alternative to SNF care, and differences in the interpretation and application of coverage rules by fiscal intermediaries in light of these local and regional factors.

With respect to the problem of the backlog of hospital patients awaiting nursing home placement, existing evidence suggests that many are awaiting Medicaid, not Medicare, placements. However, hospital prospective payment may exert a greater influence toward increasing the use of Medicare SNF services because it gives hospitals a strong financial incentive to discharge patients as soon as is medically appropriate. Thus, hospital prospective payment may increase demand for Medicare SNF care. It would, therefore, be desirable to have a payment system that encourages facilities to admit Medicare patients so they do not get backlogged in the hospital.

Because state certificate of need (CON) requirements limit the capacity of SNFs to respond to increasing demand by increasing bed supply, it is also important to take into account how alternative reimbursement systems and incentives may affect the use of other types of postacute care such as rehabilitation hospitals and swing beds. Under Medicare, rehabilitation hospitals and rehabilitation units of general hospitals are providers that must be engaged primarily in rehabilitation as defined, in part, by 75 percent of their patients being treated for conditions that typically require inpatient rehabilitation. The swing bed option under Medicare

allows small hospitals (under 50 beds), operating in rural areas where there is a scarcity of long-term care beds, to use their beds for either acute or long-term care services. The expected increase in demand for postacute care implies that specific options for prospective payment need to provide incentives to allow SNFs to manage heavier Medicare caseloads and also to promote the most efficient use of SNFs in relation to other postacute benefits under Medicare. Although rehabilitation hospitals and swing beds are currently subject to different reimbursement rules under Medicare than SNFs, they may, in some cases, serve similar types of patients. For example, average lengths of stay in some of these units, like that of SNFs (29 days), are relatively short. Both rehabilitation units and rehabilitation hospitals average 22 days per stay, while swing bed stays average 13 days. On the other hand, while SNFs are currently reimbursed at cost up to limits based on the average costs of participating facilities, rehabilitation hospitals and units are reimbursed at cost up to limits based on each facility's base-year costs adjusted for inflation. Equally dissimilar are the reimbursement rules for swing beds used for long-term care; when its swing beds are used for long-term care patients, a hospital is reimbursed for routine costs at a per diem rate equal to its state's average Medicaid SNF rate.

We can expect the same increased efficiencies from SNF operations as has been experienced by changing the hospital reimbursement system based on historical costs to one based on prospective rates. Although the current system for paying SNFs does not inherently reward provider efficiency, the need is not as great as it was for hospital payments because the expenditure growth rate for SNF services has been much lower than that for hospital care. From FY 1975-83, the annual rate of growth for Medicare SNF expenditures was 8.4 percent. This growth rate is essentially the same as the growth rate in the nursing home "market basket", a

measure of the price of the inputs (e.g., food, nurses, etc.) necessary to produce a day of nursing home care. In recent years, total SNF expenditures have grown at rates higher than the marketbasket. From 1981 to 1982 the increase in total expenditures was 10 percent higher than changes in marketbasket, while the corresponding comparison was 128 percent from 1982 to 1983. These increases were due principally to increases in utilization.

Skilled nursing facilities with more than a minimal Medicare caseload are required to complete the detailed hospital cost report. Given the relatively small Medicare caseload in most facilities, SNFs find this reporting requirement burdensome. Some prospective payment systems would reduce the paperwork requirement. With respect to retroactive payment adjustments, prospective payment could alleviate reimbursement rate changes.

Casemix Analysis

The development of a casemix measure is important in the design of a prospective payment system for Medicare SNF services. Casemix measurement is a generic term referring to many approaches for determining differences in resources required by different patients. Different resource requirements to meet different patient needs translate into differences in payment rates according to patient need. The central casemix measure under Medicare hospital prospective payment is a patient specific one called diagnosis-related groups (DRGs). Under hospital prospective payment, DRGs which require more resources (e.g., longer lengths of stay, more laboratory tests) are paid at higher amounts. Without provisions to pay higher amounts for patients who require more resources, hospitals would have incentives to accept only patients requiring lower levels of care, making it very

difficult for severely ill patients to receive hospital care. This same dynamic applies to SNF services today where, without a casemix measure, providers have incentives to treat lighter care patients.

Research specifically on the casemix of Medicare SNF patients is very limited, primarily because overall they make up such a small part of the nursing home population. The existing research on casemix and resource use in nursing homes has focused on the general nursing home population. Thus, these results may not be directly applicable to Medicare SNF patients because they are based on the long term care needs of the general nursing home population rather than the short-term skilled or rehabilitative care Medicare SNF patients receive. This literature indicates that limitations in activities of daily living such as bathing, dressing, and feeding are most important in predicting resource consumption and related costs. Diagnosis, the only patient-specific casemix information routinely collected on Medicare SNF patient conditions, is less important. Analysis of information on diagnoses of Medicare patients shows that there is a great deal of variation in the costs and lengths of stay among Medicare SNF patients with the same diagnosis. This indicates that diagnosis alone is not a comprehensive casemix measure for distinguishing among patients according to their resource needs.

In the absence of sufficient data to derive a direct patient-specific casemix measure for Medicare SNF patients, an evaluation of existing facility data which might provide a proxy casemix measure based on facility characteristics was undertaken. It was found that Medicare days as a percent of total patient days is directly related to cost and may be used as a proxy casemix measure. Percent Medicare days measures the extent to which facilities provide care to short-term skilled and rehabilitative patients rather than to long term care patients. Analysis

of freestanding facilities indicates that in 1980 a one-percentage point increase in the proportion of Medicare days in a facility increased the per diem rate by 16 cents. For hospital-based facilities a one percent increase in proportion Medicare increased per diem costs by 56 cents. In addition, other analyses prepared specifically for this Report (Shaughnessy et al., 1983; Sulvetta and Holahan, 1984) indicate that Medicare patients have, on average, more frequent and severe medically-oriented problems. Thus, while not as powerful a casemix measure as DRGs for hospitals, percent Medicare days might be used as a limited proxy casemix measure until sufficient data are collected and analyzed to develop a direct patient specific casemix measure. In developing such a casemix measure, various aspects of Medicare SNF cases, including diagnosis, disabilities, and specialized services, will need to be considered. HCFA is sponsoring ongoing research on "resource utililization groups" (rugs), a casemix measure based primarily on functional disability, which could prove to an appropriate analogue to the hospital DRG for skilled nursing facility care.

Hospital-Based and Freestanding SNFs

That higher costs of hospital-based SNFs relative to freestanding SNFs may be due to differences in casemix between the two types of providers has been a major issue in reimbursement policies for Medicare SNFs. The absence of empirical evidence to resolve the issue resulted in different policies for reimbursing hospital-based SNFs at different times and a mandate from Congress to investigate the extent to which the higher costs of hospital-based SNFs are attributable to heavier care patients.

Sufficient information is currently not available to definitively quantify the proportion of the existing cost differences that can be attributed to the various factors such as unmeasured casemix, quality of care, and inefficiency. Percent Medicare days, a proxy measure for casemix, is associated with higher costs and, on average, hospital-based SNFs have higher percent Medicare days than freestanding SNFs. Medicare program data on staffing patterns indicate that hospital-based SNFs have more nursing hours, more licensed nurses, and a greater orientation toward rehabilitation that freestanding SNFs, suggesting a different casemix between the two types of facilities.

Shaughnessy et al. (1983) studied casemix in high Medicare utilization SNFs and found hospital-based patients to be characterized by more severe medical problems (e.g., recovery from surgery, shortness of breath, intravenous catheters). Patients in freestanding SNFs tended to have more mental status problems, terminal illness, and urinary tract infections. An analysis of casemix using data from the Medicare and Medicaid Automated Certification System (Sulvetta and Holahan, 1984) found that higher proportions of patients in hospital-based than freestanding SNFs had disability problems and needed specialized services. Three studies of low Medicare utilization facilities (Cameron and Knauf, 1983; Sulvetta and Holahan, 1984; and Shaughnessy et al., 1982) found differences in the casemix of hospital-based and freestanding SNFs, with most of the evidence pointing toward greater severity of hospital-based patients. Mor and Sherwood (1983) found virtually no differences in Medicare diagnoses and disabilities between hospital-based and freestanding facilities in Oregon, and some differences in Massachusetts. In both States, hospital-based patients tended to be more rehabilitation oriented.

Results from two studies carried out for this Report suggest that casemix accounts for some of the cost differences between hospital-based and freestanding SNFs. Shaughnessy (1984) estimated that casemix differences between hospital-based and freestanding SNFs may explain up to 50 percent of their cost differences, while Sulvetta and Holahan (1984) estimated that 43 percent of the cost differences were due to casemix and staffing.

Conclusions

The Department conducted a thorough analysis of internal administrative data, reviewed existing literature and commissioned outside studies to provide the most complete picture currently available on the Medicare SNF industry. Our analysis of the available information indicates, however, that important issues need to be considered before specific options for reimbursement reform of the Medicare SNF benefit can be addressed.

A key issue is that no reliable and valid patient specific casemix measure presently exists for Medicare SNF patients. While the research presented in this report described the state of knowledge on the relationships between casemix and resource consumption of Medicare SNF patients, it is clear that further work is required.

A second major issue is the effect of hospital prospective payment on SNF's and other postacute benefits under Medicare. Since hospital payment under Medicare is on a per case basis, hospitals will have incentives to keep patients in an acute care setting only as long as is medically necessary. Thus, some observers predict that hospitals will discharge more patients to Medicare SNFs and other postacute

units, such as rehabilitation hospitals and "swing beds." Because the Medicare SNF patient appears in many cases to ressemble a beneficary cared for in a rehabilitation setting and/or a hospital swing bed, though all three types of post acute care are currently reimbursed at different rates and according to different rules, the examination of reimbursement alternatives for SNFs should also take into account these related forms of postacute care.

Finally, the quality of care for Medicare beneficiaries needs to be ensured under any SNF prospective payment system. The Department is engaged in research and operational initiatives that are intended to improve our ability to examine patient outcomes to assure quality of care.

Results from our current research and operational initiatives should provide additional information to address many of the unanswered questions. This additional information will be incorporated in our analysis of specific SNF payment reform proposals which, as required by the 1984 Deficit Reduction Act, will be forwarded to the Congress in a separate report.

INTRODUCTION

This Report to Congress was written in partial response to section 101 of P.L. 97-248, the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) and to Section 1888 of the Deficit Reduction Act of 1984. These sections required the Secretary of Health and Human Services "to develop, in consultation with the Senate Committee on Finance and the Committee on Ways and Means of the House of Representatives, proposals for legislation which would provide that hospitals, skilled nursing facilities, and, to the extent feasible, other providers, would be reimbursed under title XVIII of this Act on a prospective basis." The report on hospital prospective reimbursement was sent to the Congress in December 1982 and formed the basis of the hospital prospective payment legislation enacted on April 20, 1983. The Social Security Amendments of 1983, P.L. 98-21, completely revamped the way Medicare pays for inpatient hospital services.

In section 605 of P.L. 98-21 and in Section 1888 of the Deficit Reduction Act of 1984, the Congress also asked the Secretary to study and report on "(1) the effect which the implementation of section 102 of the Tax Equity and Fiscal Responsibility Act of 1982 (requiring a single reimbursement limit for skilled nursing facilities) would have on hospital-based skilled nursing facilities, given the differences (if any) in the patient populations served by such facilities and by community-based skilled nursing facilities and (2) the impact on skilled nursing facilities of hospital prospective payment systems, and recommendations concerning payment of skilled nursing facilities." This Report does not address the second issue since many providers did not begin under the new system until the summer of 1984 and, therefore, it is premature to evaluate its effect on skilled nursing facilities.

Increasingly over the last few years, Congress and the Executive Branch have been reexamining the reimbursement methods by which Medicare pays providers. This review has been prompted by general dissatisfaction with current reimbursement methodologies. In particular, it is widely accepted that Medicare retrospective, cost-based reimbursement principles do not encourage efficiency because they do not reward cost containing behavior. To the extent that this is true, the Medicare program does not act as a prudent buyer in the marketplace. Other commonly cited problems of the current reimbursement system include burdensome reporting requirements and financial uncertainty created by retroactive rate adjustments. In addition, it is often suggested that, as a result of these problems, skilled nursing facilities (SNFs) refuse to participate in Medicare, creating inadequate access for Medicare beneficiaries and the related problem of a backlog of hospital patients awaiting placement in nursing homes.

This report provides a detailed analysis of the Medicare SNF benefit, analyzes the structure of this industry, discusses the development of a Medicare SNF casemix measure, and analyzes the differences between hospital-based and freestanding SNFs. This report also addresses the reimbursement issues involved in the Medicare SNF benefit; however, as required by the 1984 Deficit Reduction Act, specific SNF payment reform proposals will be forward to the Congress in a separate report.

In preparing this Report, the Department has benefited from discussions with Members of Congress, Congressional staff, and representatives of the health care industry and consumer groups. This Report has five chapters. Chapter I provides background on nursing home care and Medicare coverage and reimbursement for services in skilled nursing facilities. Chapter II presents statistics on the facilities

in the Medicare SNF program. Chapter III discusses the current Medicare reimbursement system. Chapter IV reviews various measures of casemix in nursing homes and discusses the relationship of casemix and resource use. Chapter V analyzes the casemix differences between hospital-based and freestanding (community-based) skilled nursing facilities.

CHAPTER I

BACKGROUND AND CONTEXT

This section presents data on the SNF benefit and program statistics on expenditures, per diem payments, and utilization rates as well as a description of covered services and the current reimbursement system. The Medicare skilled nursing benefit is a limited benefit designed to provide short-term post-acute care for persons needing skilled nursing or rehabilitative services. Medicare SNF expenditures account for slightly less than one percent of Medicare and two percent of total nursing home expenditures. Medicare pays for nursing home care on a retrospective, reasonable cost basis subject to limits on the costs to be reimbursed. By contrast, most State Medicaid programs reimburse nursing homes based on prospectively set rates.

A. Medicare SNF Benefit

Medicare provides skilled nursing facility services under the Hospital Insurance (Part A) program. Coverage, for up to 100 days of care per spell of illness, is limited to patients who have had three days of hospital care and need daily skilled nursing or related rehabilitation services. A new spell of illness or benefit period begins when the beneficiary has not been an inpatient in a hospital or skilled nursing facility for 60 consecutive days. For the first 20 covered days in a SNF, the beneficiary pays no coinsurance. For days 21 through 100, the beneficiary is subject to a daily coinsurance payment of one-eighth of the hospital deductible ($44.50 in 1984).

Major services covered by the Medicare program for patients receiving SNF care include a semi-private room, meals, regular nursing services, rehabilitation services (such as physical, occupational, and speech therapy), drugs furnished by the facility during the stay, and medical supplies and appliances. SNF services which are not covered by Medicare include personal convenience items (such as television or telephones), private duty nurses, extra charges for a private room (unless needed for medical reasons), and the first three units of blood in a benefit period. In addition, physicians' services for SNF patients are not covered under the SNF benefit, but they are covered under the Medicare Supplementary Medical Insurance (Part B) program. Certain other covered services, such as laboratory services, can be reimbursed under Part A or Part B.

The Medicare SNF benefit is designed to provide a less costly alternative to inpatient hospital care for those patients who require institutional skilled nursing care but not the scope and intensity of medical services provided in a hospital. The Medicare SNF benefit is a short-term post-hospitalization benefit under which up to 100 days of care are covered as long as certain conditions are met. Many patients admitted under the Medicare SNF benefit have actual lengths of stay considerably beyond their Medicare covered days. For example, although a patient stays in a facility for 90 days, Medicare coverage may terminate on day 30 because Medicare's coverage requirements are not met after the 30th day.

The Medicare coverage requirements are:

- The patient requires daily skilled nursing care or related rehabilitative services.

- A physician certifies that the patient needs such care and must order it.

- As a practical matter, the care can only be provided on an inpatient basis in a skilled nursing facility.

- The patient has had a medically necessary stay in a Medicare participating hospital for at least three consecutive days prior to admission to a SNF. TEFRA (P.L. 97-248) allows the Secretary to eliminate the three-day prior hospitalization requirement if s/he finds that it will not increase Medicare expenditures or compromise the acute care nature of the benefit. To date HCFA has not been able to make that finding. For further discussion, see Appendix I.

- The patient is admitted within 30 days after being discharged from the hospital.

- The patient is admitted for further treatment of a condition for which he was treated in the hospital. A patient who has been discharged from a SNF may be readmitted to a participating SNF within 14 days of his discharge without re-entering a hospital.

Skilled nursing services and rehabilitative care meeting the Medicare coverage requirements include services provided directly by or requiring the supervision of skilled nursing personnel or skilled rehabilitation professionals which the patient needs on a daily basis and which, as a practical matter, can only be provided in a skilled nursing facility or on an inpatient basis. The types of services covered include those skilled services which are essential to the rehabilitation and recovery

of the patient and also those which are necessary to prevent deterioration of the patient's conditions and sustain the patient's current capacities even when full recovery or medical improvement is not imminent.

Some examples of services which meet the definition of skilled nursing services are:

- Intravenous or intramuscular injections and intravenous feeding.
- Levine tube and gastrostomy feedings.
- Naso-pharyngeal and tracheotomy aspiration.
- Insertion or replacement of catheters.
- Application of dressings involving prescription medications and aseptic techniques.
- Care of extensive decubitus ulcers and other common skin disorders.
- Initial phases of a regimen involving administration of medical gases.
- Restorative nursing procedures, including the related teaching and adaptive aspects of skilled nursing, which are part of active treatment and require the presence of licensed nurses at the time of performance, e.g., teaching the skills and facts necessary for understanding adherence to a regimen such as bowel and bladder training.

Services such as help in walking and getting in and out of bed, assistance in bathing, dressing, feeding, and using the toilet, preparation of special diets, and supervision of medications which can usually be self-administered, and which do not require the continuing attention of trained paramedical personnel, would not be included as skilled nursing services. If a patient needs a variety of unskilled services on a regular daily basis, that patient could, nonetheless, be considered a skilled care patient if the planning and overseeing of the aggregate of the unskilled services required regular daily involvement of skilled personnel.

Also eligible for Medicare SNF coverage are patients who are in regular need of skilled rehabilitation services (other than nursing) which are essential to their recovery following a hospital stay or to prevent their condition from worsening and which, as a practical matter, should be provided in an institution. The recognition of a patient's need for skilled rehabilitative services as a basis for meeting the level of care requirement is intended to cover situations such as the following: (1) non-ambulatory stroke patients who need daily skilled rehabilitative services such as speech therapy, but who do not necessarily need skilled nursing services; and (2) hip fracture patients who need daily physical therapy services after the fracture has healed to the weight-bearing stage.

B. Program Statistics: Expenditures and Utilization

Annual expenditures for Medicare SNF care are small relative to both total national nursing home expenditures and total Medicare expenditures. In 1983, for example, Medicare SNF expenditures of $529 million accounted for only 1.8 percent of total national nursing home expenditures (Table 1). In contrast, Medicaid spent $12.4 billion on nursing home care, almost half (42.8 percent) of all nursing home

Table 2: Medicare Benefit Expenditures: Calendar Year 1983

	Dollars in million	Percent Distribution
Hospital care	$40,370	70.3%
Physician Services	13,395	23.3
Other Professional Services (Including Home Health)	1,464	2.6
Durable Medical Equipment	816	1.4
SNF Services	529	0.9
Other	868	1.5
Total	$57,442	100.0%

Source: Health Care Financing Administration, Bureau of Data Management and Strategy.

Table 3: Total and Per Diem Medicare SNF Payments: Calendar Years 1975-83

	Total Payments		Per Diem Payments		SNF Market Basket
	Expenditures (Millions)	Percent Change	Amount	Percent Change	Percent Change
1975	$278	-	$31.31	-	-
1976	327	17.6	33.64	7.4	7.3
1977	362	10.7	37.59	11.7	6.8
1978	347	(-4.1)	38.64	2.8	8.8
1979	368	6.1	43.60	12.8	9.2
1980	396	7.6	47.03	7.9	9.9
1981	433	9.3	51.67	9.9	9.6
1982	468	8.1	54.04	4.6	7.4
1983 (est.)	529	13.0	56.75	5.0	5.7
Annual Compound Rate of Growth 1975-1983		8.4		7.7	8.3

Source: Health Care Financing Administration, Bureau of Data Management and Strategy.

Table 4: SNF Medicare Covered Days: Calendar Years 1973-1983

Calendar Year	Covered Days (millions)	Covered Days/1000 Beneficiaries	Covered Days/1000 Aged Beneficiaries	Covered Days/1000 Disabled Beneficiaries
1973	8.63	373.58	398.70	61.76
1974	8.97	377.76	398.29	144.28
1975	8.88	363.10	385.26	133.90
1976	9.72	387.18	413.84	132.93
1977	9.63	373.24	399.59	128.33
1978	8.98	338.18	364.46	113.56
1979	8.44	309.96	333.98	108.38
1980	8.42	302.32	325.91	103.39
1981	8.38	297.47	321.72	94.48
1982	8.66	301.10	324.19	96.89
1983 (est.)	9.32	319.76	342.76	102.82

Source: Health Care Financing Administration, Bureau of Data Management and Strategy.

general nursing home population. The mean number of Medicare covered days per admission was 29.6 days in 1980. While at least 23 percent of Medicare SNF admissions stayed beyond the Medicare covered days, even these long-stay individuals had an average length of stay (36 days) which was considerably shorter than that of the general nursing home population (456 days). A review of the LOS distribution of Medicare covered days indicates that 50 percent of the admissions have less than 21 days of covered care (Table 5). The percentage of admissions then declines fairly steadily between 21 and 90 days of covered care. In the final interval of 91-100 covered days in the Table, the percentage rises slightly to 6.3 percent of the total admissions. This last interval of 91-100 days accounted for 18.5 percent of all covered days.

C. Current Medicare SNF Reimbursement Policy

Skilled nursing facilities, like hospitals prior to prospective payment, are reimbursed on the basis of reasonable costs actually incurred and then subject to limits. Medicare's final payment to a SNF is determined only after a SNF has itemized its costs for a full year on a Medicare cost report. Fundamentally, the method used to arrive at the Medicare payment to a SNF consists of determining (1) the SNF's total of the types of costs which Medicare allows, (2) what share of this total is attributable to Medicare patients, and (3) whether the resultant amount is "reasonable". Approximately 35 percent of all participating SNFs have their reimbursement constrained by the limits. For these facilities and those approaching the cost limits, the current system rewards providers who serve light care patients because their higher costs for treating heavy care patients are not recognized in the flat rate per day retrospective reimbursement limit system currently in effect. In addition, facilities whose costs are below the limits receive only their costs and so, in effect, are penalized for any efficiencies.

Table 5: Distribution of Medicare Stays
by Covered Days of Care: Calendar Year 1980

Days	Distribution of Stays
1-10	25.8%
11-20	24.4
21-30	15.6
31-40	9.6
41-50	6.4
51-60	4.4
61-70	3.2
71-80	2.5
81-90	1.8
91-100	6.3
Total	100.0%

Source: Health Care Financing Administration, Bureau of Data Management and Strategy.

1. General

The amount that Medicare will pay to a facility, based on its reported costs, is determined through a process of cost allocation and cost apportionment. Essentially, the costs of a SNF's non-revenue producing cost centers, or overhead costs (e.g., depreciation and housekeeping) are allocated to the SNF's direct or revenue-producing cost centers (nursing services, lab, therapies, etc.). The overhead costs are allocated on the basis of an accounting methodology known as "step down" or some other method agreed upon by HCFA and the facility. For example, depreciation might be allocated based on the relative proportion of square feet in each department, and housekeeping might be based on hours of service.

After the allowable direct and indirect costs of the revenue-producing cost centers are determined, these costs are then apportioned between Medicare and other users of the institution. In the case of routine services (i.e., room, board, and nursing), total allowable routine costs are divided by total inpatient days of care to determine a per diem rate. Medicare then reimburses the SNF for the number of days used by Medicare beneficiaries. It is, therefore, assumed that the routine costs associated with Medicare patients are the same as those for non-Medicare patients. Research completed for this report produces data that create serious doubts about the accuracy of that assumption.

For ancillary services costs are apportioned on a ratio of Medicare charges to all charges applied to costs (RCCAC) basis. A ratio for Medicare charges to total charges (RCC) is determined for each ancillary cost center (e.g., drugs, radiology, laboratory, and physical, occupational, and speech therapies). This ratio is applied to the total allowable costs (AC) accumulated in the center during the past fiscal

year to arrive at Medicare's share of the allowable cost from each center. Medicare reimbursement to a SNF generally includes all ancillary services. An exception to this is where Part B payments are made directly to the beneficiary or an outside supplier (e.g., outpatient physical therapy supplier) if the services are not furnished directly by the SNF or "under arrangement" to a SNF inpatient (i.e., supplied by an outside supplier but billed to the SNF).

2. Cost Limits

Section 1861(v)(1) of the Social Security Act, widely known as section 223 of the Social Security Amendments of 1972, authorizes the Secretary to set limits on allowable costs that will be reimbursed under Medicare. These limits are to be based on estimates of the expenses for the efficient delivery of needed health services. Under this authority, HCFA has published limits on SNF per diem inpatient routine costs since 1979. The limits are currently set at 112 percent of the average costs of urban and rural freestanding facilities. Wage-related costs are adjusted by the Bureau of Labor Statistics (BLS) geographic area hospital wage index. Capital-related and ancillary costs are excluded from the cost limits.

Prior to TEFRA, separate limits were established for hospital-based and freestanding facilities, with the hospital-based facilities having much higher limits. Section 102 of TEFRA eliminated these dual limits, establishing single limits based on the costs of freestanding facilities subject to such adjustments as the Secretary deems appropriate. The only routinely made adjustment was an "add-on" to account for certain higher costs of hospital-based facilities that are attributable to the Medicare cost allocation procedures. Section 605 of the Social Security Amendments of 1983 (P.L. 98-21) postponed the effective date of TEFRA's single limit

provision from October 1, 1982, to October 1, 1983. Section 2319 of the Deficit Reduction Act of 1984 (P.L. 98-369) made some further modifications. For cost reporting periods beginning on or after July 1, 1984, separate limits will continue to be established for freestanding facilities in urban and rural areas at 112 percent of the mean operating costs of urban and rural freestanding facilities, respectively. Limits for urban or rural hospital-based facilities will be set at the appropriate freestanding facility limit plus 50 percent of the difference between the freestanding facility limit and 112 percent of mean operating costs for hospital-based facilities. In addition, cost differences between hospital-based and freestanding facilities attributable to excess overhead allocations resulting from Medicare reimbursement principles will be recognized as an add-on to the limit for hospital-based SNFs. Adjustments will be made to take account of differences in wage levels prevailing in a facility's area. Exceptions may be granted based upon case mix or circumstances beyond the control of either a freestanding or hospital-based facility.

3. Capital Reimbursement Policies

Medicare reimburses for capital on a reasonable cost basis. Capital reimbursement includes payments for depreciation, interest, and a return on equity capital.

Depreciation. Medicare pays depreciation on buildings and equipment used in the provision of patient care. Depreciation payments are calculated based on the owner's historical cost of the asset and its estimated useful life. To encourage providers to set aside funds for asset replacement, interest earned on funded depreciation accounts is not offset against allowable interest expense.

Revaluation of Assets. When a nursing home is sold in an arms-length transaction, the basis for depreciation payments to the new owner under Medicare are subject to provisions regarding revaluation of assets. As of July 18, 1984, Section 2314 of the Deficit Reduction Act of 1984 (P.L. 98-369) amended the Medicare statute concerning those capital-related costs of hospitals and SNFs associated with revaluation of assets. This newly enacted provision on revaluation of assets restricts reimbursement for capital upon the change of ownership of a hospital or skilled nursing facility (SNF) to the lesser of the cost under Medicare to the owner of record on enactment (or, if later, the first owner of record) or the purchase price, thereby eliminating upward revaluation. Costs of legal fees, negotiation, or settlement of the sale are not reimbursable. The Secretary is required to take into account the limit on revaluation when establishing reimbursable rental charges in sale and leaseback agreements. The recapture of depreciation up to the full value of the initial asset under Medicare is required.

Interest. Medicare reimburses for "necessary" and "proper" interest expense incurred to finance an asset related to patient care. Investment income earned by the SNF is used to offset allowable interest expenses except when the income is from a provider's funded depreciation account, qualified pension funds, or invested gifts, grants, and endowments, which are kept separate from other funds.

Equity Capital. Equity capital is capital, excluding borrowing, which is invested in an enterprise. Medicare provides a return on equity capital to proprietary providers. The rate of return is equal to one and one-half times the average of the rate of interest on special issues of public debt obligations issued to the Part A Trust Fund. The rate of return for the period October 1, 1982 - September 30, 1983 was 16.359 percent.

4. Reporting Requirements

SNFs are required to file relevant portions of the Medicare cost report that are also used for acute hospitals (Form 2552). The cost report is designed to identify allowable costs related to patient care, allocate these costs among the various activities of the facility (cost-finding), and determine Medicare's share of the home's allowable costs (cost apportionment). Much of the detail in the Medicare cost report can be attributed to cost-finding and the need to carve out capital related costs in order to apply the section 223 cost limits.

D. How Medicaid Reimbursement Compares with Medicare Reimbursement

Medicaid rather than Medicare is by far the largest source of funding for nursing home care, public or private. Medicaid accounts for 50 percent of all nursing home expenditures (public and private); Medicare accounts for 2 percent. Thus, most facilities are probably more responsive to the incentives created by the State Medicaid reimbursement systems than the Medicare reimbursement system.

States have great flexibility in how they set Medicaid rates for skilled nursing facilities and States may use any methodology they wish so long as they comply with section 1902(a)(13)(A) of the Social Security Act which requires that rates be "reasonable and adequate to meet the costs which must be incurred by efficiently and economically operated facilities in order to provide care and services in conformity with applicable State and Federal laws, regulations, and quality and safety standards." Most States base their definition of allowable costs in part on Medicare principles, but they generally require less detailed cost reports (in some cases without cost-finding). Current law and regulations require all States to

periodically audit facility costs. With the exception of a few States that pay flat rates to all facilities within a class, the results of these audits generally trigger adjustments to the rates. State Medicaid programs generally pay less for skilled nursing facility services than Medicare. (See Table 6)

There are four basic categories of reimbursement methodologies: facility specific retrospective rates, facility specific prospective rates, flat class prospective rates, and combination systems. Table 7 presents State-by-State information on Medicaid nursing home payment methods. Appendix II presents this information in greater detail. As of December 31, 1983, only ten States employed retrospective facility specific payment systems similar to Medicare's for SNFs. Thirty-one States set a facility specific prospective rate by adjusting a prior period's costs to reflect inflation up through the end of the rate period for SNFs. Six set a uniform prospective rate for all facilities in the same class (e.g., all SNFs). In each class, providers' costs per diem are arrayed from the lowest to the highest and then given an allowance for inflation to project such costs into a rate setting period. A level of cost (e.g., the 90th percentile of these arrayed per diem costs) is then selected to become the prospective class rate. This rate is then paid to all facilities in that class. Generally, uniform class rates are prospectively determined and are not subject to a retroactive adjustment. Three States employed combination methods that combine features of the above systems for SNFs.

In addition, four States (Illinois, Ohio, West Virginia, and Maryland) have developed payment systems that adjust reimbursement according to patient population cost characteristics. The aim is to provide higher reimbursement for patients who require more costly special services or greater than average nursing staff time, so that patients requiring more care will not be rejected by nursing homes and remain

TABLE 6
COMPARISON OF AVERAGE MEDICARE AND MEDICAID SNF RATES, FY 1981

State	A. Medicare Total Per Diem Cost 1/2/	B. Medicare Routine Per Diem Cost 1/	C. Medicaid Per Diem Rate	D. Type 3/ of Service Included in Medicaid Rate	E. Medicare Per Diem as Percentage of Medicaid Per
U.S. Average	$ 52.15	$ 46.76	$41.66		
Alabama	$ 31.84	$ 30.76	30.79 4/	3	99.9% (B)
Alaska 10/	108.73	104.65	97.39 4/	1	--
Arizona	58.11	51.23	--		--
Arkansas 10/	34.51	31.22	25.53	2	--
California	49.04	43.55	36.10	3	120.6% (B)
Colorado	45.22	39.16	28.73	2	157.4% (A)
Connecticut	43.84	42.42	41.49	2	105.7% (A)
Delaware	41.32	37.93	44.28	2	93.3% (A)
Dist. of Col 10/	71.23	59.53	65.90	3	--
Florida	46.17	38.90	--	2	--
Georgia	49.62	43.06	28.63	2	173.3% (A)
Hawaii	93.77	77.76	71.56	1	131.0% (A)
Idaho	41.68	39.91	33.12 5/	2	125.8% (A)
Illinois	60.84	49.53	32.60	3	151.9% (B)
Indiana	53.41	43.00	--		--
Iowa	77.00	60.44	35.62	3	169.7% (B)
Kansas	67.50	56.34	27.80	2	242.8% (A)
Kentucky	53.75	44.94	42.74	3	105.1% (B)
Louisiana 10/	62.45	52.42	31.85	2	--
Maine	73.54	63.35	61.15	3	103.6% (B)
Maryland	45.33	43.17	36.14 6/	2	125.4% (A)
Massachusetts	50.85	47.23	41.06	3	115.0% (B)
Michigan	45.75	42.19	35.56	3	118.6% (B)
Minnesota	68.80	57.46	44.81	4	128.2% (B)
Mississippi 10/	95.21	83.95	28.79	3	--
Missouri	69.39	55.34	37.13	3	149.0% (B)
Montana	44.86	42.82	36.75	3	116.5% (B)
Nebraska	49.93	45.58	38.22	3	119.3% (B)
Nevada	66.23	57.75	40.25	3	143.5% (B)
New Hampshire	68.25	58.19	--	3	--
New Jersey	55.05	49.89	46.13	3	108.2% (B)
New Mexico 10/	78.09	70.10	66.31	3	--
New York	67.52	64.37	67.63	1	99.8% (A)
No. Carolina	44.17	40.73	41.40	2	106.7% (A)
No. Dakota	45.76	41.34	36.33	2	126.0% (A)
Ohio	45.34	41.57	38.56	2	117.6% (A)
Oklahoma 7/ 10/	115.12	85.25	26.00	3	--
Oregon	54.43	46.40	39.79	3	116.6% (B)
Pennsylvania	48.42	43.84	--	2	--
Puerto Rico 10/	92.51	72.77	--		--
Rhode Island	49.59	46.94	47.32	2	104.8% (A)
So. Carolina 7/	42.02	40.29	44.25	2	95.0% (A)
So. Dakota 10/	47.20	41.60	26.36	1	--
Tennessee	48.92	42.19	40.50 9/	2	120.8% (A)
Texas 8/	49.90	45.13	33.65	3	134.1% (B)
Utah	62.59	50.22	39.32	3	127.7% (B)
Vermont	52.35	47.84	47.77	2	109.6% (A)
Virginia	58.77	50.14	51.26	2	114.7% (A)
Washington	50.91	44.63	34.37	3	129.9% (B)
West Virginia	50.39	46.45	36.80 3/	2	136.9% (A)
Wisconsin	53.99	47.32	42.00	1	128.5% (A)
Wyoming	--	--	33.71	2	--

1/ Except where noted otherwise, Medicare reported cost data are adjusted to correspond to the State fiscal year.

2/ Medicare ancillary cost per diem component was estimated using total ancillary cost divid total patient days. Based on previous analyses, this approach understates the actual Med reimbursement level for ancillary costs, which is determined on an RCCAC basis.

3/ Codes: 1. All inclusive rate
2. All inclusive less prescribed drugs.
3. Routine services only (may include non-legend drugs, medical supplies, DME).
4. Routine services plus prescribed drugs.

4/ Combined SNF and ICF rate. 5/ Dual facility rate. 6/ Comprehensive Care Facility ra

7/ Medicare data adjusted to FYE 9-30-81; Medicaid rate is CY 1981.

8/ Medicare data adjusted to FYE 9-30-81; Medicaid rate is FYE 8-31-81

9/ Per diem rate is capped at $28.60 for nursing homes providing physical or occupational the

10/ Less than 10 Medicare SNFs reported cost data.

SOURCE: Medicare SNF Cost Limits Data File. Medicaid Program Characteristics Summary Tables Vol. I, April 1982 Draft (w/revisions by La Jolla Management Corp. June 1982).

Table 7: Medicaid SNF Reimbursement Systems as of August 29, 1984

State	Reimbursement System			
	Prospective Facility Specific	Retrospective Facility Specific	Prospective Class Rates	Combination
Alabama	x	-	-	-
Alaska	-	x	-	-
Arkansas	-	-	x	-
California	-	-	x	-
Colorado	x	-	-	-
Connecticut	x	-	-	-
Delaware	x	-	-	-
Dist Columbia	x	-	-	-
Florida	x	-	-	-
Georgia	x	-	-	-
Hawaii	-	x	-	-
Idaho	-	x	-	-
Illinois	x	-	-	-
Indiana	x	-	-	-
Iowa		x	-	-
Kansas	x	-	-	-
Kentucky	x	-	-	-
Louisiana	-	-	x	-
Maine	-	x	-	-
Maryland	x	-	-	-
Massachusetts	-	x	-	-
Michigan	x	-	-	-
Minnesota	x	-	-	-
Mississippi	x	-	-	-
Missouri	x	-	-	-
Montana	x	-	-	-
Nebraska	x	-	-	-
Nevada	-	-	-	x
New Hampshire	-	x	-	-
New Jersey	x	-	-	-
New Mexico	x	-	-	-
New York	x	-	-	-
N Carolina	x	-	-	-
N Dakota	-	-	-	x
Ohio	-	-	-	x

Table 7: Medicaid SNF Reimbursement Systems as of August 29, 1984 (Cont'd)

State	Reimbursement System			
	Prospective Facility Specific	Retrospective Facility Specific	Prospective Class-Rates	Combination
Oklahoma	-	-	x	-
Oregon	-	x	-	-
Pennsylvania	-	x	-	-
Rhode Island	x	-	-	-
S Carolina	x	-	-	-
S Dakota	x	-	-	-
Tennessee	-	x	-	-
Texas	-	-	x	-
Utah	-	-	x	-
Vermont	x	-	-	-
Virginia	x	-	-	-
Washington	x	-	-	-
W Virginia	x	-	-	-
Wisconsin6/30	x	-	-	-
Wyoming	x	-	-	-
Total States	31	10	6	3

Source: Health Care Financing Administration, Bureau of Eligibility, Reimbursement, and Coverage.

backed-up in hospitals awaiting nursing home placement. In general, each state uses 15 to 20 case mix "standards" as the basis of its casemix reimbursement system. Each standard represents an area of patient care, such as personal hygiene, bathing, or medications. The level of resources required to provide the appropriate care under each standard, however, differs according to the patient's condition. Thus, in these systems, each standard is first generally defined, followed by the delineation of two or more levels of care which indicate hierachical differences in the patient's need for services or assistance as covered by that standard. The first level always indicates no service being needed, and successive levels indicate progressively higher levels of service need and, hence, of resource consuption. All of the states require that the medical record or patient chart provide written documentation that the service was needed and provided, if the facility is to be reimbursed for delivering a particular service (Foley et al., 1984). Table 8 shows the case-mix standards used in the Ohio, West Virginia and Maryland case-mix reimbursement systems.

Most State Medicaid systems also provide opportunities for profit in the form of a return on equity (32 States) investment factor (4 States), or efficiency incentives (32 States). Efficiency incentives typically take the form of allowing facilities some percentage of the difference between their costs and rate ceilings. (See Appendix II for additional state by state information.)

E. Summary

The purpose of the Medicare skilled nursing facility benefit is to provide short-term (no more than 100 days) post-acute care for persons needing skilled nursing or rehabilitative services in an inpatient setting. The intent of the benefit is to

TABLE 8

Standards Used for Case Mix Reimbursement in West Virginia, Ohio, and Maryland.

WEST VIRGINIA	OHIO	MARYLAND
Behavioral/Mental Status	Behavioral/Mental Status	-----
Personal Hygiene[a]	Personal Hygiene[a]	Bathing[d]
		Dressing[d]
Eating	Eating	Eating[d]
Mobility	Mobility	Mobility[d]
Incontinence	Incontinence/Catheters	Continence[d]
Catheters	-----	-----
-----	-----	Turning and Positioning[e]
-----	-----	Tube Feeding[e]
Dressings	Dressings and Non-Routine Skin Care	Decubitus Care[e]
Medications	Medications	-----
Injections	Injections	Single Injections
-----	-----	Multiple Injections
Appliances	Appliances	-----
-----	-----	Restraints
Enemas or Douches	Enemas or Douches	-----
Suctioning/Tracheostomy	Suctioning/Tracheostomy	Suctioning/ Tracheostomy
Oxygen and/or IPPB	Oxygen and/or Aerosol Therapy	Oxygen/Aerosol
Colostomy, Ileostomy, or Ureterostomy	Colostomy, Ileostomy, or Ureterostomy	
Intravenous and Subcutaneous Fluids	Intravenous and Subcutaneous Fluids	IV/Subcutaneous
-----	Habilitation[b]	-----
-----	Specialized Services[c]	-----
-----	Physical Therapy[c]	-----
-----	Occupational Therapy[c]	-----
-----	Speech and/or Audiology[c]	-----
-----	Psychological[c]	-----

[a]Includes bathing, dressing, hair care, nail care, shaving, and dental care.

[b]Determines the need for physical and/or psychosocial rehabilitation therapies.

[c]Specific physical and psychosocial therapies.

[d]ADLS utilized to categorize patients into light, moderate or heavy care classifications (discussed in Section II.C).

[e]Special services utilized to categorize patients into a heavy special care classification (discussed in Section II.C).

SOURCE: Foley, Susan, et al., 1984 (March), (Center for Health Services Research, University of Colorado Health Sciences Center, Denver, Colorado). An Analysis of Long-Term Care Payment Systems, Study Paper1 Case Mix Measures and Medicaid Nursing Home Payment Rate Determination in West Virginia, Ohio and Maryland.

encourage the use of skilled nursing facilities as a lower cost alternative to extended hospital stays, where medically appropriate. Because of the limited nature of the SNF benefit, the $529 million spent on Medicare SNF services in calendar year 1983 accounted for less than one percent of total Medicare expenditures and slightly less than two percent of total national nursing home expenditures. The rate of expenditure growth for Medicare SNF services since 1975 had been well below the expenditure growth rate for other Medicare services such as inpatient hospital services. It has closely paralleled the SNF marketbasket index, a measure of the cost of input prices (e.g., food, utilities, nursing wages) necessary to produce a day of nursing home care. Since 1982, however, expenditures have grown more rapidly: from 1981 to 1982 expenditures growth outpaced marketbasket increases by 10 percent and from 1982 to 1983 SNF expenditures increased 128 percent over the marketbasket index. Since per diem changes in these recent years have been under marketbasket, these increases in total expenditures reflect increases in the number of SNF covered days. Currently, reimbursement for Medicare skilled nursing facility services is on a retrospective, reasonable cost basis, although upper limits on reimbursable costs are applied. In contrast, most State Medicaid programs reimburse skilled nursing facilities on a prospective payment basis.

CHAPTER II

STATISTICS ON THE FACILITIES IN THE MEDICARE SNF PROGRAM

This chapter describes the characteristics of the facilities participating in the Medicare SNF program. The first section describes the number and distribution of these facilities in terms of ownership, location, and utilization. The second section presents the costs of these facilities in terms of major cost centers and variations in costs by facility characteristics.

The following data on the facilities participating in the Medicare SNF program are derived from the 1980 cost reports, which form the basis for the 1983 section 223 cost limits. The reports include the costs of 3,492 facilities out of 4,900 participating in Medicare. Facilities that do not submit cost reports include those with very small Medicare revenues, those which have changed ownership, decertified facilities, and new participants in the program. The reporting facilities include about seven-eighths of Medicare patient days. The cost tables presented below show 1980 costs inflated by the SNF market basket to a mid-FY 1983 level.

A. Facility Characteristics

Table 9 presents the distribution of facilities participating in Medicare, beds, and patient days by type of ownership and type of facility. Proprietary (for-profit) nursing homes are a significant majority of facilities filing Medicare cost reports. Nonprofit and government facilities combined account for about one-third of all facilities. Hospital-based facilities tend to provide a greater proportion of Medicare patients days than freestanding facilities. While only 500 to 600 of the nearly 7,000 acute care hospitals have hospital-based SNFs, they account for

Table 9

Distribution of Skilled Nursing Facilities, Beds, and Medicare Patient Days
By Type of Ownership and Type of Facility: FY 1980

Ownership and Facility Type	Facilities		Certified Beds		Medicare Patient Days		Total Patient Days	
	Number	%	Number	%	Number	%	Number	%
Proprietary (Total)	2,318	66.38	176,077	63.57	4,779,656	64.95	60,070,063	63.57
Hospital-Based	40	1.15	2,088	.75	216,341	2.94	662,671	.70
Freestanding	2,278	65.23	173,989	62.82	4,563,315	62.01	59,407,392	62.87
Nonprofit (Total)	854	24.46	67,323	24.31	1,966,745	26.72	22,953,749	24.29
Hospital-Based	283	8.10	14,742	5.32	918,865	12.48	4,772,837	5.05
Freestanding	571	16.35	52,581	18.98	1,047,880	14.24	18,180,912	19.24
Government (Total)	320	9.16	33,586	12.12	612,734	8.33	11,473,552	12.14
Hospital-Based	165	4.73	11,635	4.20	332,532	4.52	3,856,128	4.08
Freestanding	155	4.44	21,951	7.92	280,202	3.81	7,617,424	8.06
TOTAL	3,492	100.00	276,986	100.00	7,359,135	100.00	94,497,364	100.00
Hospital-Based	488	13.98	28,465	10.27	1,467,738	19.94	9,291,636	9.83
Freestanding	3,004	86.02	248,521	90.73	5,891,397	80.06	85,205,728	90.17

Source: Urban Institute Medicare SNF Cost Study, 1983.

about 20 percent of Medicare patient days but comprise only 10 percent of Medicare certified beds and 14 percent of facilities. The proportion of total patient days and Medicare patient days provided by each of the ownership (proprietary, nonprofit, and government) groups corresponds to their proportion of total facilities and beds.

The SNFs participating in Medicare are concentrated in relatively few States. For example, New York and California account for almost 30 percent of all participating facilities (Table 10). Medicare certified beds and Medicare patient days are similarly concentrated in relatively few States. For example, six States (California, New York, Pennsylvania, Ohio, Michigan, and Florida) account for about half of total Medicare patient days, while the Medicare population in these six states compose 37 percent of the national Medicare population.

By geographic location, approximately 75 percent of facilities are in urban areas where freestanding facilities outnumber hospital-based ones by approximately ten to one (Table 11). In the rural areas, freestanding facilities are only three times as prevalent as hospital-based facilities. A large majority (67 percent) of facilities are urban and freestanding. The hospital-based facilities are evenly divided between rural and urban areas. Thus, while the image of a hospital-based SNF is that of a unit in a large, urban hospital, fully half of all of these facilities are located in rural areas. Both types of facilities have high occupancy rates. Occupancy rates are higher in freestanding facilities (93 percent) than in hospital-based facilities (86 percent) with effectively no difference between urban and rural facilities.

The facilities participating in the Medicare SNF program vary dramatically in the number of Medicare patients they serve (Table 12). Most facilities supply very few

Table 10.

Number of Medicare Skilled Nursing Facilities, Beds, and Patient Days, By State: FY 1980

State	Number of Facilities	Percent of Total	Number of Beds	Percent of Total	Number of Medicare Patient Days	Percent of Total
California	585	16.75	48,802	17.62	780,268	10.60
New York	396	11.34	54,115	19.54	573,834	7.80
Pennsylvania	264	7.56	25,169	9.09	668,575	9.08
Ohio	228	6.53	19,565	7.06	616,322	8.37
Michigan	200	5.73	20,006	7.22	437,834	5.95
Florida	152	4.35	8,826	3.19	639,390	8.69
Alabama	130	3.72	9,527	3.44	175,853	2.39
Illinois	118	3.38	4,735	1.71	461,213	6.27
North Carolina	106	3.04	6,037	2.18	232,052	3.15
New Jersey	97	2.78	8,963	3.24	273,122	3.71
Connecticut	93	2.66	10,207	3.69	54,546	0.74
Washington	72	2.06	1,954	0.71	116,539	1.58
Kentucky	70	2.00	3,007	1.09	207,362	2.82
Indiana	69	1.98	4,269	1.54	162,984	2.21
Massachusetts	67	1.92	3,995	1.44	104,828	1.42
Maryland	57	1.63	6,099	2.20	123,138	1.67
South Carolina	56	1.60	4,727	1.71	86,313	1.17
Minnesota	54	1.55	2,728	0.98	53,808	0.73
Wisconsin	50	1.43	2,883	1.04	85,685	1.16
Montana	47	1.35	1,953	0.71	34,681	0.47
Tennessee	47	1.35	2,865	1.03	165,372	2.25
Virginia	44	1.26	1,659	0.60	140,712	1.91
Oregon	42	1.20	1,463	0.53	128,754	1.75
Missouri	31	0.89	1,735	0.63	140,047	1.90
Georgia	30	0.86	2,928	1.06	73,059	0.99
Rhode Island	30	0.86	1,169	0.42	63,615	0.86
Texas	29	0.83	1,762	0.64	103,051	1.40
Colorado	28	0.80	1,447	0.52	36,254	0.49
North Dakota	27	0.77	1,661	0.60	51,295	0.70
West Virginia	27	0.77	2,125	0.77	34,270	0.47
Idaho	25	0.72	1,038	0.37	13,603	0.18
New Hampshire	24	0.69	659	0.24	45,848	0.62
Hawaii	20	0.57	1,295	0.47	42,868	0.58
Iowa	20	0.57	571	0.21	74,052	1.01
Kansas	17	0.49	562	0.20	23,686	0.32
Utah	17	0.49	496	0.18	32,296	0.44
Arizona	15	0.43	527	0.19	53,568	0.73
Nevada	15	0.43	255	0.09	20,246	0.28
Maine	14	0.40	359	0.13	22,905	0.31
Vermont	14	0.40	576	0.21	15,069	0.20
Delaware	12	0.34	839	0.30	19,199	0.26
Nebraska	12	0.34	611	0.22	28,466	0.39
Louisiana	9	0.26	1,252	0.45	30,970	0.42
Oklahoma	8	0.23	411	0.15	50,219	0.68
Mississippi	5	0.14	101	0.04	5,941	0.08
South Dakota	5	0.14	224	0.08	11,166	0.15
New Mexico	4	0.11	214	0.08	9,435	0.13
Alaska	3	0.09	107	0.04	286	0.00
Puerto Rico	3	0.09	152	0.05	18,081	0.25
Arkansas	2	0.06	128	0.05	10,020	0.14
District of Columbia	2	0.06	228	0.08	6,435	0.09
TOTAL	3,492	100.00	276,986	100.00	7,359,135	100.00

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 11

Type of Skilled Nursing Facility,
by Urban-Rural Location: FY 1980

	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Hospital-Based	245	6.78	243	27.71	488	13.97
Freestanding	2,370	93.22	634	72.29	3,004	86.03
Total	2,615	100.00	877	100.00	3,492	100.00

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 12

Distribution of Medicare Certified SNFs, and Medicare Patient Days by Number of Medicare Patient Days in Facility: FY 1980

Medicare Days	All Facilities				Number of Medicare Patient Days in Facility			
	Frequency	Cumulative Frequency	Percent	Cumulative Percent	Frequency	Cumulative Frequency	Percent	Cumulative Percent
30,000+	3	3	0.086	0.086	104,315	104,315	1.417	1.417
20,000-29,999	15	18	0.430	0.515	357,696	462,011	4.861	6.278
15,000-19,999	5	23	0.143	0.659	88,988	550,999	1.209	7.487
10,000-14,999	59	82	1.690	2.348	704,673	1,255,672	9.575	17.063
9000-9999	20	102	0.573	2.921	187,550	1,443,222	2.549	19.611
8000-8999	38	140	1.088	4.009	324,266	1,767,488	4.406	24.018
7000-7999	50	190	1.432	5.441	374,017	2,141,505	5.082	29.100
6000-6999	55	245	1.575	7.016	355,243	2,496,748	4.827	33.927
5000-5999	84	329	2.405	9.422	458,183	2,954,931	6.226	40.153
4000-4999	144	473	4.124	13.545	641,060	3,595,991	8.711	48.864
3000-3999	218	692	6.243	19.788	749,791	4,345,782	10.189	59.053
2000-2999	428	1,119	12.257	32.045	1,062,570	5,408,352	14.439	73.492
1000-1999	846	1,965	24.227	56.271	1,191,603	6,599,955	16.192	89.684
900-999	134	2,099	3.837	60.109	127,324	6,727,279	1.730	91.414
800-899	142	2,241	4.066	64.175	120,443	6,847,722	1.637	93.051
700-799	156	2,397	4.467	68.643	117,026	6,964,748	1.590	94.641
600-699	159	2,556	4.553	73.196	102,919	7,067,667	1.399	96.039
500-599	152	2,708	4.353	77.549	83,656	7,151,323	1.137	97.176
400-499	168	2,876	4.811	82.360	75,235	7,226,558	1.022	98.198
300-399	175	3,051	5.011	87.371	60,659	7,287,217	0.824	99.023
200-299	170	3,221	4.868	92.239	42,504	7,329,721	0.578	99.600
100-199	153	3,374	4.381	96.621	23,040	7,352,751	0.313	99.913
Under 100	118	3,492	3.379	100.000	6,374	7,359,135	0.087	100.000

Source: Urban Institute Medicare SNF Cost Study, 1983.

Medicare days; a few facilities provide a disproportionately large number of Medicare days. For example, of 3,492 homes submitting cost reports, the top 329 SNFs provide about 40 percent of total days. Many (88) of these high Medicare utilization homes are hospital-based SNFs in urban areas. These eighty-eight homes are 24 percent of the 329 high Medicare use homes, while urban hospital-based SNFs are only 7 percent of the total 3,492 SNFs submitting cost reports. Half of the high Medicare utilization facilities (52 percent) are located in five of the highest Medicare SNF use states (California, Illinois, Ohio, Pennsylvania and Florida). In contrast to the top 329 homes, the bottom 1,000 SNFs account for only about five percent of Medicare days.

B. Facility Costs

Among the facilities submitting cost reports, the average total per diem cost of all Medicare SNF days in 1983 was about $80 per day (Table 13). Costs weighted by Medicare patient days are used in setting section 223 cost limits for SNF reimbursement. The average SNF costs weighted by Medicare patient days are significantly higher than the unweighted SNF costs, implying that facilities providing more Medicare covered services tend to be higher cost facilities. By cost centers, routine operating costs comprised 72 percent of the total, while ancillary costs accounted for 22 percent of the total. The proportions for routine and ancillary costs in Medicare participating SNFs are quite different from their proportions in hospitals, where they are roughly equal. Capital accounts for 6 percent of costs, about the same as for hospitals. The standard deviations relative to the means are quite large suggesting substantial heterogeneity among the participating SNFs, which may be attributable to factors such as casemix and quality, ownership, and variations in Medicaid payments across States.

Table 13

Average Skilled Nursing Facility Per Diem Costs,
All Facilities: FY 1983

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating Costs	$50.25	$21.35	$57.63	$45.82	$50.15	$34.63
Routine Nursing	20.32	8.63	23.24	18.24	19.88	12.77
Routine Overhead	29.93	13.74	34.39	29.20	30.27	23.26
Medicare Ancillary Costs	12.91	11.21	17.23	24.28	11.20	16.98
Drugs and Supplies	5.69	5.69	6.90	9.49	4.81	9.22
Therapy	7.22	8.75	10.33	19.90	6.39	13.44
Capital Costs 1980	4.13	3.03	4.92	6.02	3.97	4.48
Total Costs	$67.29	$29.38	$79.78	$65.39	$65.32	$42.61

S.D. = Standard Deviation.

Source: Urban Institute Medicare SNF Cost Study, 1983.

There is variation in costs by ownership and geographic location. Table 14 shows that nonprofit homes are the most expensive per day on average ($104), followed by government homes ($92). The least expensive homes are the proprietary facilities ($68). The high cost of nonprofit homes is due in part to the fact that virtually all hospital-based facilities are nonprofit. Table 15 shows that hospital-based SNFs have an average total cost per day of $132, which is approximately twice as high as the average cost ($67) of freestanding SNFs. Table 16 shows that urban facilities are more expensive than rural facilities ($82 versus $67), even though the more expensive hospital-based facilities comprise one-third of rural facilities and only one-tenth of urban facilities.

The relationships between facility charges and costs are presented in Table 17, which shows that for all SNFs, charges are 13 percent higher than costs. Proprietary facilities have the highest charge to cost ratio with charges 18 percent higher than facility costs. Nonprofit facilities have charges exceeding costs by six percent, while government owned facilities have charges equal to costs.

C. Multivariate Analysis of Costs

A multivariate regression was used to analyze facility costs. This type of analysis allows us to isolate the effects on costs of each facility characteristic when other characteristics are held constant. Table 18 lists and defines the facility characteristics that we examined as determinants of costs. The variables included in the regression analysis were rural area, proprietary facility, nonprofit facility, hospital wage index, number of certified beds, percent Medicare days, admissions per bed, occupancy rate in certified beds, freestanding distinct part facility, hospital-based facility, and nursing home chain membership. Table 19 presents the results of the

Table 14

Average Skilled Nursing Facility Per Diem Costs,
By Type of Ownership: FY 1983

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Proprietary SNFs						
Routine Operating	$43.46	$13.51	$47.96	$29.73	$42.60	$21.98
Routine Nursing	17.99	6.23	19.78	13.05	17.44	9.62
Routine Overhead	25.47	8.19	28.18	18.04	25.16	13.54
Medicare Ancillary	12.23	8.47	15.62	17.69	11.35	13.59
Drugs and Supplies	5.72	5.12	7.09	8.60	5.27	8.39
Therapies	6.51	6.40	8.53	13.87	6.08	10.59
Capital Costs	4.10	2.48	4.73	4.84	4.00	3.93
Total Costs	$59.79	$18.87	$68.30	$44.07	$59.95	$28.83
Nonprofit SNFs						
Routine Operating	$62.80	$27.64	$76.01	$58.69	$60.98	$36.70
Routine Nursing	24.82	11.05	30.19	23.26	23.63	14.45
Routine Overhead	37.98	17.94	45.82	38.03	37.36	26.94
Medicare Ancillary	14.68	15.82	21.86	35.80	11.30	21.54
Drugs and Supplies	5.75	6.76	6.98	11.51	4.41	10.74
Therapies	8.93	12.56	14.89	29.76	6.89	16.73
Capital Costs	4.61	4.18	5.92	8.53	4.39	5.49
Total Costs	$82.09	$41.00	$103.80	$89.13	$76.67	$51.66
Government SNFs						
Routine Operating	$65.94	$24.77	$74.40	$43.74	$68.08	$46.14
Routine Nursing	25.21	19.43	27.98	16.51	25.20	14.76
Routine Overhead	40.73	16.86	46.42	29.35	42.88	33.60
Medicare Ancillary	13.11	13.20	14.87	22.47	10.22	23.85
Drugs and Supplies	5.34	5.46	5.19	9.26	3.21	9.80
Therapies	7.77	10.32	9.67	18.09	7.01	20.23
Capital Costs	3.14	2.72	3.18	3.95	2.99	4.74
Total Costs	$82.19	$33.90	$92.45	$59.63	$81.29	$60.35

S.D. = Standard Deviation.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 15

Average Facility Per Diem Costs
by Type of Facility: FY 1983

Freestanding SNFs

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating	$45.76	$14.30	$48.37	$24.29	$47.51	$30.24
Routine Nursing	18.77	6.16	19.86	10.60	19.03	11.36
Routine Overhead	26.99	9.24	28.50	15.44	28.48	20.28
Medicare Ancillary	11.39	3.98	14.12	15.28	11.33	14.55
Drugs and Supplies	5.26	5.14	6.58	8.50	4.62	8.95
Therapy	6.13	6.28	7.54	11.09	5.71	11.09
Capital Costs	3.98	2.49	4.46	4.27	3.96	4.40
Total Costs	$61.12	$18.01	$66.95	$32.63	$61.80	$34.32

Hospital-Based SNFs

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating	$77.88	$33.40	$94.98	$65.97	$74.49	$40.38
Routine Nursing	29.86	13.95	36.85	27.69	27.74	15.32
Routine Overhead	48.01	21.14	58.14	42.31	46.75	27.07
Medicare Ancillary	22.32	19.16	29.75	44.63	19.18	24.87
Drugs and Supplies	8.37	7.80	8.18	13.85	6.53	10.46
Therapy	13.95	15.91	21.57	37.94	12.64	21.18
Capital Costs	5.11	5.12	6.78	11.41	4.10	4.97
Total Costs	$105.31	$50.05	$131.51	$102.70	$97.76	$58.21

S.D. = Standard Deviation.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 16

Average Facility Per Diem Costs
Urban and Rural Facilities: FY 1983

Urban SNFs

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating	$50.94	$22.22	$59.28	$50.28	$51.60	$38.08
Routine Nursing	20.60	8.94	23.82	20.03	20.40	13.99
Routine Overhead	30.34	14.30	35.46	32.06	31.20	25.60
Medicare Ancillary	13.51	11.51	18.05	26.50	11.66	18.22
Drugs and Supplies	5.84	5.71	7.05	10.12	4.94	9.77
Therapies	7.67	9.08	11.00	21.89	6.72	14.59
Capital Costs	4.25	3.16	5.11	6.58	4.08	4.84
Total Costs	$68.70	$30.46	$82.44	$71.56	$67.34	$46.20

Rural SNFs

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating	$48.20	$18.34	$49.81	$26.01	$43.79	$18.60
Routine Nursing	19.50	7.58	20.47	10.82	17.62	7.21
Routine Overhead	28.70	11.84	29.34	16.46	26.17	12.53
Medicare Ancillary	11.13	10.09	13.27	14.73	9.21	12.16
Drugs and Supplies	5.26	5.62	6.19	7.19	4.24	7.32
Therapies	5.87	7.51	7.07	11.09	4.97	8.94
Capital Costs	3.79	2.57	4.03	3.68	3.49	3.10
Total Costs	$63.13	$25.46	$67.10	$37.09	$56.49	$25.72

S.D. = Standard Deviation.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 17

Ratio of Routine Charges to SNF Costs:* FY 1980

	Freestanding		Hospital-Based		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Proprietary	1.181	.31	1.020	.39	1.178	.31
Nonprofit	1.072	.29	1.049	.38	1.064	.32
Government	1.029	.23	0.971	.35	0.999	.30
Total	1.153	.31	1.020	.37	1.134	.32

S.D. = Standard Deviation.

*Does not include return on investment.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 18

Regression Analysis Variables

RURAL	Rural area
PROP	Proprietary facility
NP	Nonprofit facility
WAGE	Hospital wage index
BEDS	Number of certified beds
PMED	Percent total inpatient days that are Medicare days
APB	Admissions per bed
OCC80	Occupancy rate in certified beds in 1980
DP	Freestanding distinct part facility
HB	Hospital-based facility
CH	Chain facility (10 or more facilities under same ownership)

Table 19: Determinants of SNF Per Diem Costs: FY 1980

Independent Variables	Dependent Variables*			
	Total Costs	Routine Operating Costs	Medicare Ancillary Costs	Capital Costs
R^2	.5456	.5533	.2618	.1727
CONSTANT	51.13	39.33	5.87	5.93
RURAL	-2.01 (-2.06)	0.05 (-0.073)	-1.95 (-4.12)	-0.01 (-0.04)
PROP	-11.92 (-8.58)	-14.92 (-14.91)	1.48 (2.18)	1.52 (7.86)
NP	-0.81 (-0.60)	-3.31 (-3.39)	1.09 (1.65)	1.41 (7.49)
WAGE	48.40 (19.17)	37.59 (20.67)	9.14 (7.44)	1.67 (4.76)
BEDS	0.03 (4.90)	0.03 (8.10)	0.14 (-3.47)	0.03 (5.45)
PMED	0.46 (19.80)	0.30 (17.59)	0.14 (12.04)	0.03 (9.12)
APD	0.40 (4.01)	0.25 (3.45)	0.16 (3.46)	-0.02 (-1.15)
OCC 80	-0.46 (-12.90)	-0.33 (-12.69)	-0.70 (-4.03)	-0.64 (-12.97)
DP	2.57 (3.06)	3.02 (5.00)	-0.90 (-.221)	0.45 (3.86)
HB	31.98 (23.48)	21.15 (21.57)	9.71 (14.66)	1.12 (5.91)
CH	-3.40 (-3.58)	-4.59 (-6.72)	1.89 (4.10)	-.70 (-5.34)

* T-statistics in parentheses.

Source: Urban Institute Medicare SNF Cost Study.

analysis. We examined the specific contribution of the characteristics to total, routine operating, ancillary, and capital costs, respectively.

Table 19 shows that, as a group, the facility characteristics included in the analysis explain a substantial amount of variation in total (R^2 = .54) and routine operating (R^2 = .55) costs. These numbers indicate that approximately 55 percent of the variation in costs across Medicare participating SNFs is attributable to the eleven facility characteristics in the analysis. These characteristics do less well in explaining variations in ancillary costs (R^2 = .26) and quite poorly in explaining capital costs (R^2 = .17). This is not surprising since most of the facility characteristics in the analysis are not related to patient casemix which on a priori grounds should explain a large part of ancillary costs. Similarly, few of the variables are directly related to key determinants of capital costs.

The following highlights the effects of the specific facility characteristics on specific cost categories when all other facility characteristics are held constant.

- Rural location has a negative and statistically significant effect on Medicare ancillary and total costs, but not on routine operating costs. On total costs, for example, rural facilities cost $2 less per day than their urban counterparts. The negative effect on ancillary costs may reflect the lack of physical and occupational therapists in rural areas.

- Proprietary ownership has a negative, statistically significant, and large effect on total and routine operating costs. For example, the total costs of proprietary facilities are about $12 per day less than government owned facilities. Proprietary ownership is associated with slightly higher Medicare ancillary and capital costs.

- Nonprofit homes are not significantly different than government facilities in total cost per day. They are statistically significantly less expensive for routine operating costs and more expensive for Medicare ancillary and capital costs.

- The wage index is a positive and significant variable in explaining total, routine operating, Medicare ancillary, and capital costs. This result is expected since the index reflects variations in wage rates which are direct determinants of facility costs.

- The number of certified beds is a positive and statistically significant variable for total, routine operating, and capital costs. It is a significant and negative variable for Medicare ancillary costs. However, in all cases, the effect is very small. For example, each additional certified bed is associated with a three cent per day increase in total costs.

- Percent of inpatient days that are Medicare is indicative of more resources expended by the facility. The greater the percentage of Medicare days, the greater the likelihood that the facility provides greater amounts of short-term, rehabilitative care. Percent Medicare days is a very statistically significant variable and is positively associated with total, routine operating, Medicare ancillary, and capital costs. The greatest effect is in the routine operating category, where each percent increase results in an increase of 30 cents per day. Since the range in the percent Medicare days is 1-100, this variable could account for a difference of up to $30 per day between homes.

- Admissions per bed is also highly correlated with casemix. The higher the number of admissions per bed the greater the likelihood that the facility is oriented towards short-term, rehabilitative care. Admissions per bed is positive and significant for total, routine operating, and Medicare ancillary costs. The size of the effect is relatively small. It is not significant for capital costs.

- Occupancy rate is a highly statistically significant and negative determinant of total, routine operating, Medicare ancillary, and capital costs. As the occupancy rate increases by one percent, per diem costs decline by 46 cents. Since the occupancy rate in SNFs is generally high, the amount of cost differences between facilities that are attributable to this variable is not likely to be very great.

- Facilities may, at their option, have only some of their beds participate in Medicare (i.e., the distinct part option). Distinct part (compared to full) certification is a positive and significant variable for total, routine operating, and capital costs. It is negative and significant for Medicare ancillary costs. The effect of this variable is relatively small since it accounts for less than $3 per day in total costs.

- Hospital-based (compared to freestanding) facilities are positively and significantly related to total, routine operating, Medicare ancillary, and capital costs. The size of the coefficents is extremely large. After controlling for all other variables, hospital-based facilities are still $32 per day more expensive than freestanding facilities. The higher costs of hospital-based facilities can be attributed to many factors, including the overhead allocation

rules for hospitals and their subunits (e.g., SNFs), inefficiency of these units, and/or caring for sicker patients who require more services.

- Chain facilities (defined as 10 or more facilities under the same ownership) are negatively and significantly related to total, routine operating, and capital costs. They are positively and significantly related to Medicare ancillary costs. The lower routine operating costs of chain facilities may be due in part to economies of scale.

In an extension of the analysis discussed above, we added States to the list of characteristics for predicting costs. Since Medicaid, not Medicare, is the major public financing program for nursing homes, it is likely that State variables (as proxies for their Medicaid payment systems) would have a significant impact in explaining nursing home costs. Table 20 contains these results. Adding State variables raised the percent of variation in costs explained (R^2) to .64 (from .55) for total costs, .67 (from .55) for routine operating costs, .33 (from .26) for Medicare ancillary costs, and .24 (from .17) for capital costs. While the effects of the other variables are similar to the results discussed above, the analysis found variation in costs per day across the States. For example, relative to total costs per day in California, care in the same type of facility would be $21.49 more expensive in Hawaii and $18.34 less expensive in Illinois.

D. Summary

This chapter reviewed the characteristics and costs of facilities participating in the Medicare SNF program. Although there are approximately 5,000 facilities certified to provide care under Medicare, the majority of patient days are provided

Table 20 Regression Analysis Incorporating State Variable To Explain Costs

MODEL: MODEL01 SSE 1050881 F RATIO 113.68
DFE 3398 PROB>F 0.0001
DEP VAR: TOTALCST MSE 309.264635 R-SQUARE 0.6350
TOTAL COSTS

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T RATIO	PROB>|T|	VARIABLE LABEL
INTERCEPT	1	81.438193	5.497082	14.8148	0.0001	
RURAL	1	-2.264772	0.938218	-2.4139	0.0158	RURAL AREA=1
PROP	1	-13.101724	1.281240	-10.2258	0.0001	PROPRIETARY FACILITY
NP	1	-3.724108	1.254189	-2.9693	0.0030	NON-PROFIT FACILITY
WAGE	1	35.296829	3.226898	10.9383	0.0001	WAGE INDEX
BEDS	1	0.008917768	0.005236395	1.7030	0.0887	NUMBER OF CERTIFIED BEDS
PMEDCERT	1	55.466622	2.328178	23.8240	0.0001	PCT MEDICARE DAYS
APB	1	0.338173	0.096531	3.5032	0.0005	ADMISSIONS PER BED
OCCB0	1	-60.686199	3.448610	-17.5973	0.0001	OCCUPANCY RATE IN CERTFIED BEDS
DP	1	1.054794	0.811891	1.2992	0.1940	FREESTANDING DISTINCT PART
HB	1	27.622094	1.277616	21.6200	0.0001	FACILITY TYPE/HOSP BASED=1
CH	1	-1.515290	0.884588	-1.7130	0.0868	CHAIN
AL	1	-11.620021	2.087094	-5.5676	0.0001	ALABAMA
AR	1	-3.183400	4.677648	-0.6806	0.4962	ARIZONA
CO	1	-14.661740	3.487010	-4.2047	0.0001	COLORADO
CN	1	1.636980	2.033097	0.8052	0.4208	CONNECTICUT
DE	1	-3.521350	5.200703	-0.6771	0.4984	DELAWARE
FL	1	-9.828479	1.884207	-5.2162	0.0001	FLORIDA
GA	1	-7.188587	3.487952	-2.0610	0.0394	GEORGIA
HA	1	21.490772	4.059097	5.2945	0.0001	HAWAII
ID	1	-12.117107	3.757758	-3.2246	0.0013	IDAHO
IL	1	-18.340928	2.060282	-8.9021	0.0001	ILLINOIS
IN	1	4.686137	2.467201	1.8994	0.0576	INDIANA
IA	1	0.147079	4.211905	0.0349	0.9721	IOWA
KA	1	-9.407230	4.511481	-2.0852	0.0371	KANSAS
KY	1	-8.115751	2.503493	-3.2418	0.0012	KENTUCKY
ME	1	15.211208	4.908164	3.0992	0.0020	MAINE
MD	1	-1.853119	2.506587	-0.7393	0.4598	MARYLAND
MS	1	15.747079	2.414617	6.5216	0.0001	MASSACHUSETTS
MI	1	-4.681786	1.530733	-3.0585	0.0022	MICHIGAN
MN	1	14.733987	2.739254	5.3788	0.0001	MINNESOTA
MO	1	0.455919	3.421309	0.1333	0.8940	MISSOURI
MT	1	-12.574351	2.923106	-4.3017	0.0001	MONTANA
NB	1	5.593034	5.314401	1.0524	0.2927	NEBRASKA
NE	1	10.637635	4.662143	2.2817	0.0226	NEVADA
NH	1	7.107953	3.819134	1.8611	0.0628	NEW HAMPSHIRE
NJ	1	9.560829	2.018086	4.7376	0.0001	NEW JERSEY
NY	1	19.681145	1.312806	14.9917	0.0001	NEW YORK
NC	1	-1.453982	2.129556	-0.6828	0.4948	NORTH CAROLINA
ND	1	-16.705134	3.703510	-4.5106	0.0001	NORTH DAKOTA
OH	1	-3.501040	1.541331	-2.2714	0.0232	OHIO
OR	1	-15.284338	2.982439	-5.1248	0.0001	OREGON
PA	1	-0.745046	1.474916	-0.5051	0.6135	PENNSYLVANIA
RI	1	3.547524	3.444558	1.0299	0.3031	RHODE ISLAND
SC	1	2.488451	2.722898	0.9139	0.3608	SOUTH CAROLINA
TN	1	1.164289	2.914434	0.3995	0.6896	TENNESSEE
TX	1	-8.574459	3.532157	-2.4275	0.0153	TEXAS

Table 20 (Cont'd)

Regression Analysis Incorporating State Variable to Explain Costs

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T RATIO	PROB>|T|	VARIABLE LABEL
UT	1	9.910091	4.523535	2.1908	0.0285	UTAH
VT	1	20.698617	4.894664	4.2288	0.0001	VERMONT
VA	1	-1.701518	2.946217	-0.5775	0.5636	VIRGINIA
WA	1	-5.050926	2.455339	-2.0571	0.0398	WASHINGTON
WV	1	1.890090	3.587671	0.5268	0.5983	WEST VIRGINIA
WI	1	3.866415	2.811868	1.3750	0.1692	WISCONSIN

by a relatively small number of SNFs. Approximately half of these days are provided by 13 percent of the participating facilities. Moreover, participating SNFs are concentrated in relatively few States. Half of the facilities are located in six States. It is unlikely that the supply and use of the SNF benefit is a function solely of patient need. It is likely that SNF use, being as geographically skewed as it currently is, results also from state policies affecting Medicaid reimbursement and bed supplies (e.g., certificate of need restrictions).

The nationwide analysis showed that eleven facility characteristics explained about 55 percent of the variation in total and routine costs across facilities. Addition of State variables to reflect variations in Medicaid SNF payment rates increased the explanatory power to 64 percent. Even after controlling for other variables, hospital-based facilities have higher costs than freestanding facilities and proprietary facilities have lower costs than either government or nonprofit facilities. The two proxy measures of casemix, percent of inpatient days that are Medicare and admissions per bed, were positively related to costs. While most of the characteristics were statistically significant predictors of costs, only one-third of the variation in costs remained unexplained. This result indicates that other factors, such as differences in casemix, quality of care, and provider efficiency, are accounting for cost variations in addition to those due to the facility characteristics in the analysis. Since Medicare days is a relatively small proportion (15 percent) of total SNF days, other state characteristics that affect the overall cost structure of SNFs, but that are insufficiently measured in this analysis, may also contribute to the unexplained variation in costs.

CHAPTER III

THE CURRENT REIMBURSEMENT SYSTEM

The purpose of this chapter is to review the qualities of the current reimbursement system. Some of its characteristics (e.g., lack of efficiency incentives, numerous reporting requirements, financial uncertainty created by retroactive adjustments) relate directly to the current reimbursement system; others (e.g., inadequate access, uneven use of the benefit and the backlog of hospital patients awaiting nursing home placement) may be attributed in part to the Medicare reimbursement system and in part to other factors.

A. Burdensome Reporting Requirements

According to a HCFA sponsored study carried out by the Urban Institute (1981), the required reporting of expenses on a cost center basis, maintaining statistics for cost-finding, and the time and expense of preparing the hospital oriented cost report may discourage facilities from participating in Medicare. The current burden of cost reporting associated with Medicare participation is disproportionate to the small Medicare market share. Some reductions in the cost reporting burden are possible without any change in the reimbursement methodology. But, even under some prospective payment proposals, cost reporting may be necessary if certain items are "passed through" on a cost basis.

In general, although definitive data are not available, there is widespread belief that the time and effort required by the current federal cost report is a major disincentive to SNF providers who serve mainly private pay and "light care" patients. It is generally alleged that to serve a few Medicare patients simply is not a cost effective use of time.

B. Lack of Efficiency Incentives

The current retrospective, cost-based reimbursement system contains few incentives to restrain costs, since providers are reimbursed for their actual expenditures up to the cost limits. Medicare SNF costs have grown at the rate of 7.9 percent from 1975 to 1982. Per diem payments for Medicare SNF care over the past seven years (1975-1982) have increased at 8.2 percent annually as compared to annual average increases in the SNF marketbasket price factor (a measure of the costs of goods and services that SNFs must purchase) of 8.4 percent.

SNF payment systems other than cost-based retrospective ones have been effective in creating incentives to control increases in SNF costs under Medicaid. In recent years, there have been several studies of the comparative effectiveness of various State Medicaid reimbursement methods with respect to controlling the rate of increase in Medicaid nursing home care expenditures.

Buchanan (1981) compared Medicaid per diem rates paid to SNFs (skilled nursing facilities) and ICFs (intermediate care facilities) in States with prospective and retrospective systems for the years 1975-1977. Prospective systems were associated to a statistically significant degree with lower average rates. A study based on more recent data (Urban Institute, 1982) also found that the States with prospective systems, both flat rate and individual facility specific systems, had lower average rates than the States with retrospective cost-based reimbursement systems.

A HCFA sponsored study conducted by Abt Associates (Birnbaum, 1981) focused on determinants of nursing home costs and the effect of Medicaid rate setting

methods on costs. This study concluded that, under conditions of excess demand for nursing home beds, neither prospective nor retrospective systems have an inherently greater cost-constraining potential. The reason is that there is considerable internal variation within prospective and retrospective systems. Under some circumstances, prospective and retrospective payment systems with certain key features, such as individual specific facility rates, may have more in common than two different types of prospective systems. For example, a prospective system that sets individual facility rates may be more similar to a retrospective cost based system than to a flat rate prospective payment system.

Also, very few systems are "pure types". Some "prospective" systems allow for retrospective rate adjustments under some conditions. By the same token, a retrospective payment system is only a full cost reimbursement system if it pays facility specific rates with no cost limits. In practice, however, most States with retrospective payment systems do set rate ceilings. To the extent that group ceilings are set and these ceilings are known in advance, retrospective cost-based systems begin to resemble prospective flat rate systems. According to Birnbaum et al., this is because the most crucial aspect of any cost-based system, whether retrospective or prospective, is the manner in which the rate or the rate ceiling is set. Since there is usually no advantage to receiving less than the ceiling amount, homes will tend to raise costs to the ceiling level (under retrospective reimbursement) or seek to have their facility's rate set at the ceiling level (under prospective reimbursement).

The investigators also noted, however, that whether or not prospective reimbursement is more inherently cost-containing, it appears to have several other advantages over retrospective systems. It puts the operator at financial risk, thereby

creating incentives for greater efficiency; it gives the rate setting agency greater control over the types and amounts of nursing home care for which it wishes to pay; and it encourages better planning on the part of nursing home operators since they know in advance the constraints on reimbursable costs. In sum, compared to retrospective reimbursement, prospective payment creates an environment that is more predictable.

Unlike most Medicaid payment systems, the current method of Medicare reimbursement for SNFs provides no profit reward for efficiency in controlling costs. Profits are limited to return on equity in proprietary facilities. Nonprofit and government facilities receive no surpluses under the Medicare system. Medicare reasonable cost payment actually contains disincentives for SNFs to be efficient, since reductions in cost result in correspondingly reduced revenues for the SNF. As previously noted, 32 State Medicaid programs provide an opportunity for nursing homes to earn a profit by keeping costs below a prospective rate or below a percentile or cost ceiling.

C. Financial Instability Due to Retroactive Adjustments

An inevitable consequence of a retrospective cost-based reimbursement system is that some costs are disallowed by intermediaries, months and sometimes even years, after the close of the SNF's accounting period. Since Medicare reimburses only for actual costs incurred, there is no cushion against losses that occur when expenditures a facility believed to be legitimate are subsequently disallowed for Medicare reimbursement.

A similar issue of concern is retroactive coverage denials; that is, when the intermediary determines, after care has already been provided, that a given individual for whom Medicare reimbursement is being sought was not medically eligible for SNF services. So long as Medicare continues to make coverage determinations on a case by case basis, this issue cannot be addressed through reform of the reimbursement payment method. If on the other hand, only one payment were made for both the acute and subacute part of a spell of illness coverage determinations would be far less critical and therefore retroactive denials diminished considerably.

Although the rate of Medicare SNF coverage denials in FY 1982 appears high at first glance (33.5 percent of claims), 70 percent of these denials were notices of non-covered services to beneficiaries, not denials of payment to SNFs for services that the SNFs expected to have reimbursed by Medicare. In other words, the purpose of the denial notice in over two-thirds of the cases was to inform beneficiaries that certain services were not Medicare covered (e.g., services at a lower level than skilled nursing care).

Eighty percent of facilities providing Medicare SNF services have waiver of liability status, which means that they are not financially liable for Medicare bills submitted in error with respect to the medical necessity coverage rules. Facilities attain waiver of liability status by ensuring that their error rate (percent of bills subject to denial due to coverage errors) remains less than 5 percent of claims submitted. In FY 1982, Medicare paid 6,173 claims for SNF services under waivers of liability, at a cost of about $6 million.

D. Uneven Use of the Benefit

In many parts of the country there are few Medicare certified beds or Medicare utilization is very low. Approximately one-third of all SNFs do not participate in Medicare. The use rate of Medicare services varies greatly across the nation. While the 1981 mean days of Medicare SNF care per 1,000 Medicare beneficiaries 65 and over was 310 for the nation as a whole, State variations in use of the Medicare SNF benefit ranged from a low of one day of SNF care per 1,000 elderly in Wyoming to a high of 635 days of SNF care per 1,000 elderly in Kentucky.

Some observers argue that the reasons for the decision of some SNFs not to participate in Medicare include the paperwork burden, the possibility of retrospective payment adjustments, and the lack of opportunities for profit associated with the current Medicare SNF payment system. Accordingly, a change to a prospective payment system could boost the nursing home participation rate in Medicare and increase access to Medicare SNF services in underserved areas and perhaps as a result the Medicare component of the hospital backlog problem might be alleviated.

Although there is great variation State by State in availability of Medicare certified SNF beds, Medicare certified beds per 1,000 elderly is only weakly related empirically to the use rate of Medicare SNF care. Using FY 1981 data, Medicare certified bed supply could only explain 28 percent of the variation in Medicare SNF use. A regression analysis carried out by Urban Institute researchers (using FY 1979 data) found that an increase of 10 percent in Medicare certified beds per elderly person is accompanied by on average less than a 5 percent increase in Medicare covered SNF days per elderly person (Feder and Scanlon, 1982:622). This

is because Medicare certification does not guarantee Medicare use. Nationally, the percent of Medicare certified beds actually used by Medicare patients during FY 1981 ranged from a low of one percent (in Connecticut, Wyoming, and Alaska) to a high of 35 percent (in Iowa).

States whose Medicaid programs are quite strongly oriented toward intermediate care facility (ICF) care, which means that these States rarely certify Medicaid patients at the skilled care level, tend to have nursing home industries that are strongly oriented toward providing intermediate rather than skilled care. Since Medicare SNF patients do not constitute a large market for SNF services, States that certify comparatively few Medicaid patients for SNF care cannot support as many SNF beds per 1,000 elderly as States whose policies create larger Medicaid SNF markets.

As with all determinations of covered services, the Medicare program delegates authority for SNF coverage determinations to local intermediaries. There is some evidence of variability in coverage determinations among intermediaries (Smits and Feder, 1982). This variation may be a function of regional variation in medical practices. Conditions treated in a SNF may also be treated in the hospital or via home health care. In some areas of the country, patients remain in the hospital longer and, thus, may be eligible for fewer days of SNF care or may no longer be medically eligible for Medicare SNF coverage when they are discharged from the hospital. Similarly, in some areas of the country where home health services and rehabilitation services provided at home are more readily available, home health care may substitute more frequently for Medicare SNF use. Appendix III contains a more detailed discussion of these issues.

E. Hospital Back-Up of Medicare SNF Patients

One result of inadequate access to the Medicare SNF benefit may be the necessity for Medicare to pay for extra hospital days for individuals who require Medicare SNF care, but cannot obtain a placement as soon as one is needed. This is the phenomenon of hospital back-up. Greater access to and use of the Medicare SNF benefit on the part of Medicare beneficiaries would reduce the days of hospital care necessary while patients await SNF placements. The size and scope of hospital back-up is not currently known. Estimates of the total number of hospital back-up days experienced in FY 1980 by individuals whose acute hospitals stays were paid for by Medicare range from a low of 0.7 million to a high of 7.2 million days. Again, a SNF prospective payment system might induce more facilities to participate in Medicare and to accept more Medicare patients. The impact in terms of reduction in back-up and its associated costs might be small, however, because historically only a small minority of Medicare acute care patients awaiting nursing home placement are awaiting Medicare SNF placement. Many back-up patients have historically been awaiting placements at lower levels of care, although this phenomenon may be changed as a result of hospital prospective payment. Moreover, the average time awaiting placement for Medicare SNF patients tends to be shorter than for patients awaiting Medicaid placement, hence, total back-up costs for patients awaiting Medicare SNF placements tend to be lower on average than back-up costs associated with patients awaiting Medicaid placements. In addition, the recently instituted DRG-based hospital prospective payment system is expected to reduce the amount and cost of hospital back-up days paid for by Medicare; however as some hospitals are trying to convert some of their excess capacity to sub-acute days they are encountering certificate of need obstacles. For a more detailed discussion of hospital back-up as it affects both Medicare and Medicaid patients, see Appendix IV.

F. Potential Impact of Hospital Prospective Payment on Medicare SNF Use

Under the newly implemented DRG-based prospective payment system, hospitals are paid per case, not per day of care provided. Thus, the financial incentives should encourage lengths of stay to be held to the minimum. Many observers believe that these incentives to shorten hospital stays will sharply increase both the demand for Medicare SNF services and the percentage of Medicare patients who, at the point of hospital discharge, will satisfy the medical criteria for SNF coverage.

Although currently the evidence that such effects are occurring is only anecdotal (the prospective payment system is still too new for systematic evidence on effects to be available), the anticipated rising demand for Medicare SNF services provides another argument for making changes in the Medicare SNF reimbursement system in ways that would increase the willingness of SNF providers to participate in Medicare. Over time this shift of the system to potentially more Medicare SNF days is expected to be accompanied by fewer hospital days. Hospital length of stay is apparently declining as a result of the prospective payment system and is expected to continue more rapidly to the extent that patients who no longer need acute care can be discharged to subacute levels of care.

It is important to note, however, that there are constraints on the ability of the health care system to respond to increased demand for Medicare SNF services. Demand for skilled nursing facility beds already exceeds supply in most areas of the country, but most States regulate growth in bed supply via the "certificate of need" (CON) process and have refused to grant many CON approvals for new nursing home construction or expansion in recent years as a means of controlling

growth in Medicaid expenditures. Although existing facilities could choose to admit more Medicare patients, high demand for beds from Medicaid and private pay patients may preclude reserving beds for Medicare patients since Medicare still remains a comparatively small portion of the total market for nursing home care. Medicare's small share of the market also serves to explain why many facilities orient themselves toward Medicaid patients and elect not to participate in Medicare, particularly in States where the Medicaid program certifies most patients at the "intermediate care facility" (ICF) level. (See Appendix III.) Although many hospital-based SNFs are oriented toward the provision of Medicare SNF services, hospitals that seek to establish new SNFs or to expand existing facilities face CON barriers. The only form of bed supply that can be rapidly made available to meet increased demand for Medicare SNF services are swing beds (i.e., beds that can be used either for acute or long term care) in small (less than 50 bed) rural hospitals. As of August 1984, there were 273 swing bed hospitals in 31 states. 42 percent of these small rural "swing bed" hospitals also had attached nursing homes. Clearly, in these hospitals the demand for long term care services has outpaced the capacity of their existing nursing home facilities.

G. Summary

Problems with the current retrospective, cost-based reimbursement system include: excessive reporting requirements; lack of financial incentives to curb costs and produce services with maximum efficiency; and financial uncertainty created by retroactive payment adjustments. Moreover, facilities whose costs are at or exceed the reimbursement ceilings have no incentive to take sicker patients. Research on prospective payment systems for Medicaid financed nursing home services tends to support the claim that prospective payment systems are more

cost containing than retrospective payment systems. Prospective payment would also be expected to simplify reporting requirements and to eliminate the uncertainty created by the possibility of retroactive reimbursement adjustments.

Prospective payment has also been advocated as a means to increase participation of skilled nursing facilities in the Medicare program, thereby increasing the use rate of Medicare SNF services and decreasing the backlog of hospital patients awaiting SNF placements. Currently, one-third of all SNFs certified to participate in Medicaid are not certified to participate in Medicare. Because the skilled nursing facility Medicare benefit by its nature limits the potential size of the Medicare SNF population, changes in the method of Medicare SNF reimbursement may increase the SNF use rate only slightly. The recent change to prospective payment for Medicare hospital care may actually have a much stronger impact on Medicare SNF use. To the extent that hospitals seek to maximize efficiency by discharging patients as soon as it is medically appropriate, more discharges of patients requiring subacute levels of care would tend to increase the percentage of hospital patients who could be medically appropriate users of Medicare SNF services. Thus, the DRG-based hospital prospective payment system is expected to reduce the amount and cost of hospital back-up days paid for by Medicare. At the same time, there are constraints on the expansion of nursing home bed supply to meet increased Medicare SNF demand. For example, some hospitals are prohibited by CON barriers from converting excess acute care bed capacity to certified nursing home status.

If, indeed, the introduction of the DRG based hospital prospective payment system does provide the expected impetus for discharging Medicare patients at the earliest medically appropriate date, then greater numbers of patients with more intensive

care needs will be seeking Medicare SNF placement. Currently, however, the Medicare SNF reimbursement system fails to provide adequate incentives for facilities to accept such increased numbers of heavier care patients who are more costly to serve because their resource consumption (e.g. staff time, medical equipment and supplies) is greater than average. Although the current Medicare reimbursement system reflects the actual cost to the facility of providing needed care, within payment limits, 35 percent of Medicare SNFs are already being reimbursed at these limits. The current system discourages these facilities from accepting more heavy care patients because they cannot obtain additional reimbursement to cover the added costs. It has been suggested that the Medicare reimbursement system should be changed to accommodate differences among facilities in "casemix"; i.e. the proportion of heavier care, more costly patients to lighter care, less costly patients. With a casemix adjustment that accurately reflects variation in resource consumptions, SNFs would be provided the incentive (higher payments) to admit heavier care patients. Chapter IV discusses the feasibility of developing such an approach.

CHAPTER IV

CASEMIX ANALYSIS

Casemix adjustment in the form of payment rates based on diagnosis related groups (DRGs) is a key element of the prospective payment system for hospitals under Medicare. The development of a prospective payment system for skilled nursing facilities (SNFs) parallel or analagous to the hospital prospective payment system would likewise require the development of a casemix measure to reflect the fact that some patients have heavier and more costly care needs than others. In the absence of such a casemix adjustment, the payment system would contain perverse incentives biased against providing care for sicker patients. Indeed bias against heavier care patients is a problem that has been identified with the current payment system. For this reason, the Congressional request for this study particularly identified a need for research into casemix measures that might be incorporated into a SNF prospective payment system. This chapter discusses the need for a case mix adjustor in payment systems for skilled nursing facilities (SNFs) and analyzes specific issues and difficulties involved in developing a casemix measure for Medicare skilled nursing facilities. Rather than advocate the adoption of any particular casemix measure, the analysis aims to explicate as fully as possible the pros and cons of alternative state-of-the-art casemix measures and to identify which among currently available measures has the greatest statistical correlation with cost differences.

The relationship between resource use and the type of patient cases treated is of major importance in the design of a Medicare SNF prospective payment system. To the extent that the care of different cases requires different amounts of resources, a prospective payment system for SNFs should provide differential payment rates based on patient characteristics. Adjustment of payment for

casemix could enhance access to SNF care for more severely ill patients because providers would be paid higher rates to care for sicker patients. If prospective rates are set without regard to casemix, providers could profit by admitting only patients with the lowest resource needs, thereby limiting access for heavy care patients. Providers targeting their services to the most disabled would be disadvantaged rather than rewarded by the system. The incorporation of casemix in a Medicare SNF payment system would be desirable, therefore, to assure equitable payment for care among the providers of SNF services. The value of casemix adjustments for Medicare reimbursement has been recognized in the recently implemented prospective payment system for hospitals. Current SNF reimbursement is based on the section 223 cost limits which do not incorporate adjustments for casemix differences across participating facilities.

This chapter which is organized into two sections provides background information for considering the incorporation of casemix in the Medicare SNF reimbursement system. The first section highlights the findings of a state-of-the-art review of nursing home casemix literature. The second section explores the information available for incorporating a casemix measure into the Medicare SNF payment system.

A. Relationships between Casemix and Resource Use in Nursing Homes

This section highlights the existing literature on casemix and nursing homes. The discussion is based in large part on a study by Margaret Stassen and Christine Bishop (1983) of the Brandeis University Health Policy Consortium. The literature

review was commissioned by HCFA specifically for this Report. On the basis of the research literature on casemix and nursing home resource utilization, it appears that more complex cases require more resources. Across the studies, various measures of resource utilization were examined (e.g., cost, nursing time, aide time), and in general the measures of casemix that proved to be good predictors of resource use were those reflecting level of patient disability (e.g., activities of daily living) and services provided (e.g., tube feeding). Rarely was admitting diagnosis found to be a comprehensive determinant of resource use. Unfortunately, for our purposes here, existing research on nursing home casemix has focused on Medicaid patients or on the general nursing home population. Except for a few new studies conducted specifically for this Report, reviewed in Chapter V, no casemix research has been conducted specifically on Medicare SNF patients or on the differences between Medicare and non-Medicare SNF patients. Medicare and non-Medicare SNF patients are on a priori grounds generally different in their subacute health care requirements. As such, the findings from the earlier studies can provide only indirect support for the notion that casemix is associated with resource consumption in the case of Medicare patients.

1. Variables in casemix measures:

The key factor in developing casemix measures is identifying variables that are most able to explain resource use in the nursing home population. Such variables can be (a) services received or (b) patient characteristics (e.g., diagnosis, functional levels). In general, patient characteristics measures are preferable to services received measures because, as with the fee-for-service system, a payment system that provides greater revenue for the provision of more services will provide incentives for the provision of additional, perhaps unnecessary, services.

a. Diagnosis has generally not been found to be a useful measure of differential resource use in long term nursing home care (Shaughnessy, et al., 1980; Bay, et al., 1982). This is because of the presence in the long term care population of multiple diagnoses and the absence of an indication of severity of illness. However, some specific diagnoses (e.g., severe neurological impairment, anemia, chronic respiratory disease, decubitus ulcer) have been found to be significant for assessment purposes for Medicaid or general long term care patients.

Since Medicare SNF patients enter nursing homes for services usually resulting from specific acute conditions, diagnosis may be a more useful measure in this context. Diagnosis is of special interest as a casemix adjustment because it is a central element of diagnosis related groups (DRGs), the measure being used to differentiate payment to hospitals, and it is readily available. Thus, it is the only measure that can be used without the collection and testing of new data such as patients' level of disability, severity of illness, or services received. The usefulness of DRGs in predicting expenditures for services in skilled nursing facilities is empirically untested. Although we are in the process of testing the relationship between DRGs and resource consumption, it is unknown at this time whether DRGs from prior hospital stays are valid and reliable measures of resource utilization in skilled nursing facilities. A preliminary analysis of Medicare diagnosis data as a possible casemix measure is presented below in section B.2.

b. Specialized nursing and treatments (e.g., tube feeding) are often incorporated into casemix measures either as the basis of casemix measures (Illinois, West Virginia, and Ohio Medicaid programs) or as a means for identifying the need for highly specialized or resource intensive care along with other patient character-

istics (Meiners, et al., 1982). While many different services have been included in existing Medicaid casemix based reimbursement systems, the most common specialized nursing functions are decubitus ulcer care and tube feeding.

c. Functional ability, which measures people's ability in activities of daily living (ADL), has been found to be most useful for differentiating between patient needs in long term care. Substantial consensus exists about the items that comprise ADL, including some combination of dressing, bathing, toileting, transfering, and feeding. Measures of ADL have been effective primarily because they reflect personal care needs which have been identified as the predominant type of services provided in nursing homes. Also, empirical evidence exists that relates activities of daily living measures to cost of care for nursing home patients. For example, Cameron and Knauf (1982) found a relationship between level of disability and amount of assistance in the general nursing home population. This association may be less true for Medicare patients who, by definition of the benefit, require intensive skilled nursing and rehabilitation care.

d. Mental health status measures, which capture patient behavior that may require additional staff attention, have been found to be directly related to hours of care. McCaffree, et al. (1979) found several measures of mental health to have significant relationships with contact time with staff, but with less importance than ADL.

The various categories of casemix variables discussed above each represent a facet of the total problem of an individual entering nursing homes. Moreover, it is often the interaction of medical condition and disability that normally determines the care needed. The fact that individual patient needs are not unidimensional implies

that a facility's casemix is correspondingly not unidimensional. While the literature highlights the isolated effects of specific characteristics of nursing home patients, it is important to recognize that an assessment of casemix implies a simultaneous consideration of the various measures available. This is because variation in resource use of patients with one characteristic (e.g., a specific diagnosis) is often explained by other characteristics (e.g., level of disability).

2. Relationships between patient characteristics and resource use:

The rationale for use of casemix adjustments for SNF reimbursement is to account for differing amounts of resources used by various types of patients because a nursing home should be paid higher rates for patients with greater needs. Conversely, facilities with less difficult patients requiring less services do not require the same amount of resources.

Two general approaches have been employed to relate patient characteristics to resource use. The first method entails the classification of nursing home patients into groups and the estimation of resources (e.g., nurse and nurse aide time) required to care for these patient groups. The second method entails employing facility casemix as an independent variable in a multivariate analysis with cost as the dependent variable.

All classification studies found a correlation between casemix and resource use. In addition, specific research has been carried out to develop casemix weights for State Medicaid reimbursement systems. All of the studies, which are listed in Table 21, focus on Medicaid nursing home patients or the general long term care population, rather than on Medicare SNF patients. In econometric cost function

analysis, diagnosis, independence in ADL, age, and death rate have been used to account for differences in costs among nursing homes. Over one dozen econo metric studies, listed in Table 22, have been conducted, but the results are mostly descriptive of the casemix of non-Medicare patients since only about two percent of residents are receiving care under the Medicare program. All studies, however, found that differences in casemix were associated with differences in resource consumption in nursing homes.

B. Medicare Casemix and Resource Use

Isolating the effects of casemix on costs can provide a basis for adjusting Medicare payments that will enhance both provider efficiency and patient access. At the same time, quantification of the amount of cost variations associated with casemix differences will allow comparisons across providers for efficiency and quality differences.

Table 21: Methods of Constructing Case Mix Measures

1. Patient Classification Techniques

   a. Patient classification based on resource use
      Cameron and Knauf (1982) ("DRG-type")
      McKnight (1967)
      Cavaiola (1976) and Cavaiola and Young (1980)

   b. Patient classification not based on resource use
      Swearingen et al. (Abt, 1978)
      Wisconsin PERC Study (1979)

2. Regression Analyses

   a. The patient is the unit of analysis, independent variables are all related to casemix

      McCaffree, et al. (Battelle, 1978)

   b. The facility is the unit of analysis, independent variables are all related to casemix

      Washington
      New York

   c. The facility is the unit of analysis, independent variables include casemix and other variables.

3. Service Use and/or Patient Characteristics Weighted by Time Factors and Staff Skill Level

   a. Applied to complete spectrum of patient care needs

      Illinois
      West Virginia
      Ohio
      Maryland
      Meiners et al. (1982)

   b. Applied only to specific heavy care patients

      Utah
      Massachusetts

Source: Stassen and Bishop, 1983.

Table 22: Nursing Home Cost Studies Including Patient Mix Measures

Author	Location Studied	Date of Database
Skinner and Yett	California	1969
Birnbaum et al.	National	1972
Frech and Ginsberg	National	1972
Meiners	National	1972
Birmbaum et al.	New York	1974-1976
Menemeyer	New York	1975-1976
Ullman	New York	1976
Walsh	Illinois	n.d.
Bishop (1979)	Massachusetts	1973-1975
Bishop (1980)	Massachusetts	1976
Pattee	Iowa	1976
Shaughnessy, et al.	Colorado	1978
Youket	Vermont	1979-1980
New York State	New York	1980-1981

Studies that do not use casemix measures: Ruchlin and Levy (Massachusetts), Christianson, Ries and Christianson (Montana), McConnel (Texas), Traxler (Florida), Caswell and Cleverly (Ohio), Smith and Fottler (California).

Source: Stassen and Bishop, 1983.

As noted above, the published research literature on casemix measures and their relationship to resource utilization focuses exclusively on Medicaid or general long term care patients. Medicare SNF patients have rarely been the subject of study. Thus, while the literature indicates that certain types of casemix measures are empirically related to resource use in nursing homes, findings from only a few studies are directly applicable to Medicare SNF patients and facilities.

Still more data are necessary to make patient-specific casemix adjustments for the reimbursement of SNFs under Medicare. Additional information is required both to develop direct casemix measures and to determine precisely the relationship between casemix and costs in Medicare participating SNFs. Data currently available for this type of analysis are limited to those Medicare SNF data that are routinely collected by HCFA. These data, which are collected from patient stay records and facility cost reports, provide indications of casemix related cost variations. Notably, they do not include information on measures that were found to be important determinants of cost variations in the general nursing home population (e.g., patients' functional disabilities, services received).

This section presents, first, an analysis of the relationship between proxy casemix measures based on facility (as opposed to individual patient) characteristics discussed in Chapter II (i.e., Medicare as a proportion of total facility days and admissions per bed). The analysis demonstrates that more complex facility casemix corresponds to higher costs. While these results may still be confounded by other factors such as provider efficiency and quality, they underscore the desirability of including case mix considerations into the Medicare SNF payment system. Such a system would ideally take account of individual patient characteristics in the development of a patient-specific casemix measure. Second, this section examines whether patient diagnosis can be used reliably as a casemix measure.

1. Proxy Measures of Casemix

The short-term rehabilitative purposes for which Medicare patients use nursing homes suggest that they are different than other patients in the same SNFs who are there for "long term care". The conceptual basis for this notion has been confirmed in a study showing more medical and rehabilitation needs among Medicare patients (Shaughnessy et al., 1983). The greater medical and rehabilitation needs of Medicare patients are likely to be positively associated with more resource consumption and, therefore, higher costs. For this reason, we would expect facilities with higher proportions of Medicare patients to have higher costs. Similarly, the short-term use of SNFs by more costly rehabilitation patients suggests that costs should be positively associated with increased admissions per bed. Thus, percent of Medicare patient days as a proportion of total days in Medicare certified beds and admissions per bed may be indicator measures of a facility's casemix. Facilities' scores on these variables may indicate the degree to which they are oriented towards short-term rehabilitative care (covered by Medicare) as opposed to maintenance care for chronic conditions (not covered by Medicare). They are "proxy" measures in that they do not directly measure patient characteristics. However, to the extent that they are correlated with direct measures of patient needs and characteristics, these surrogate measures can help to differentiate facilities by their casemix complexity.

Higher cost facilities tend to have higher proportions of Medicare patient days in certified beds than do lower cost facilities. As shown in Table 23, 14 percent of the facilities with average routine operating per diem costs of greater than $45 (the median FY 1983 per diem cost) have 40 percent or more of their Medicare certified beds occupied by Medicare patients; less than 3 percent of the facilities with costs

Table 23: Distribution of Skilled Nursing Facilities by Routine Operating Costs, by Percent of Total Inpatient Days that are Medicare Days: FY 1983

Percent Medicare	Routine Operating Costs					
	Under $45.00		$45.00 and Over		Total	
	Number	Percent	Number	Percent	Number	Percent
Under 5%	1,040	59.56	785	44.96	1,825	52.26
5.00% - 19.99%	532	30.47	457	26.14	989	28.33
20.00% - 39.99%	127	7.27	253	14.49	380	10.88
40.00%+	47	2.69	251	14.38	298	8.53
Total	1,746	100.00	1,746	100.00	3,492	100.00

Source: Urban Institute Medicare SNF Cost Study, 1983.

under the $45 average have a similar Medicare occupancy rate. Viewed another way, of the 300 facilities that have 40 percent or more of their total patient days that are Medicare days, 84 percent are in the higher cost category.

The regression analysis of costs presented in Chapter II also demonstrates the effects of percent Medicare days on costs. That analysis showed that the percent of Medicare certified days was a highly significant variable and that each percent change in Medicare certified days was positively associated with an increased total cost per day of $.46. The effect of the percent of Medicare days on costs is highlighted in a regression analysis in which percent Medicare days was treated as a discrete variable, breaking it into ranges. The results of this analysis, presented in Table 24, show that facilities with more than 40 percent Medicare days have costs that are $26 per day higher than facilities with less than 5 percent Medicare days.

The results of this analysis of the effect of the percent Medicare days on costs is consistent with Shaughnessy et al.'s (1983) finding that the resource need characteristics of Medicare patients differ from those of other patients who may use the same facility. Since the per diem costs of individual facilities reflect the casemix of all users of certified beds (i.e., total costs divided by Medicare and non-Medicare patient days), these findings suggest that the proportion Medicare days may be an important indicator of casemix in a payment system.

A second proxy measure of facility casemix is the number of admissions per bed. The higher the number of admissions per bed, the greater the likelihood that facilities provide more short-term rehabilitative care. The relationship between admissions per bed and cost is clearly shown in Table 25 which divides the certified

SNFs by median routine operating costs per-diem ($45). For example, among the lower cost facilities, eight percent had a turnover rate of six or more admissions per bed. In contrast, 20 percent of the higher cost facilities had high turnover rates of six or more admissions per bed. Moreover, in the regression analysis present in Chapter II, admissions per bed has an independent effect on cost per day after the proportion Medicare days is controlled. Each additional admission per bed was equivalent to an increase of $.40 per day in total costs.

In summary, on a facility level the proxy casemix measures of proportion of Medicare days to total facility days and facility turnover rates are positively related to costs. That is, facilities with a higher proportion of Medicare days and higher admissions per bed have higher costs.

2. Diagnosis

While the prior research on nursing home casemix suggests that diagnosis per se is not a comprehensive measure of casemix, two factors indicate that an additional assessment of this characteristic of nursing home patients is desirable. First, the Medicare SNF benefit was designed to function as a substitute for inpatient hospital care, and the Medicare SNF patient is expected to use nursing homes for short-term restorative care rather than for long term care. Diagnosis may, therefore, be a better predictor of resource use among Medicare patients than among Medicaid or private pay patients who use nursing homes for long term care. Second, diagnosis is essentially the only Medicare SNF patient characteristic outside of age and sex that is currently being routinely collected. Hence, the feasibility of incorporating casemix in a prospective payment system at this time will be determined, to a large degree, by the utility of diagnosis as a casemix measure. In the following, we

Table 24: Percent Medicare Days As Discrete Variables*: FY 1980

Percent Medicare Days	Dependent Variables: Total Cost+	Routine Operating Cost+	Medicaid Ancillary Cost+	Capital Cost+
5.00-9.99	$ 2.91 (2.81)	$ -0.09 (-0.12)	$ 2.80 (5.64)	$0.20 (1.40)
10.00-19.99	5.44 (4.64)	1.64 (1.93)	3.48 (6.20)	0.32 (1.96)
20.00-39.99	6.75 (4.94)	2.09 (2.12)	4.32 (6.60)	0.34 (1.82)
40.00-100.00	26.08 (16.49)	15.21 (13.31)	9.30 (12.28)	1.56 (7.17)

T-Statistic is given in parenthesis

* With controlling RURAL, PROP, NP, WAGE, APB, OCC 80, DP, HB, and CH (See Chapter II).

\+ Compared to facilities with 0.00-4.99 percent Medicare days.

Source: Urban Institute Medicare Cost Study, 1983.

Table 25

Annual Admissions Per Bed,
High and Low Cost Homes: FY 1980

Admissions Per Bed*	Routine Operating Costs					
	Under $45.00+		$45.00 and Over+		Total	
	Number	Percent	Number	Percent	Number	Percent
0 - .99	541	30.98	686	39.29	1,227	35.14
1.00 - 2.99	855	48.97	457	26.17	1,312	37.58
3.00 - 5.99	218	12.48	251	14.37	469	13.43
6.00+	132	7.56	352	20.16	484	13.86
Total	1,746	100.00	1,746	100.00	3,492	100.00

*Estimated FY 1983 costs.

+Includes both Medicare and non-Medicare admissions.

Source: Urban Institute Medicare SNF Cost Study, 1983.

review Medicare program data on the relationship between diagnosis and length of stay, Medicare payment per day, and charges per day.

If diagnosis were a good casemix measure (i.e., were a good predictor of resource utilization), then length of stay and cost per day by diagnosis should vary substantially across diagnoses and relatively little within diagnoses. For a given diagnosis the standard deviation (i.e., the measure of dispersion around the mean) should be small relative to the mean. In a "normal" statistical distribution, for example, two-thirds of all cases would have costs per day or lengths of stay plus or minus one standard deviation of the mean. Thus, the smaller the ratio of the standard deviation to the mean, the smaller the range necessary to encompass two-thirds of the cases and the better the casemix measure (e.g., diagnosis) is in discriminating among cases.

Table 26 presents the 17 most prevalent primary diagnoses among Medicare SNF admissions in 1980; these diagnoses account for 50 percent of all Medicare SNF admissions. The two most common diagnoses in 1980 were cerebrovascular disease (13.4 percent) and fracture of an unspecified part of the neck of the femur (11.9 percent). The third most common diagnosis, congestive heart failure, comprised only 3.6 percent of the total admissions indicating the relatively small frequency of other specific diagnoses relative to the top two. Approximately half of the other specific diagnoses accounted for less than one percent of admissions each. The frequency distribution of admissions by diagnosis has an important implication for considerations of a diagnosis-based casemix adjustment. While differences in average length of stay (LOS), charge per day, and payment per day exist among diagnoses, such variations may not be important for measuring casemix if the greatest differences are found between diagnoses which are associated with

Table 26: Medicare SNF Admissions by Most Prevalent Diagnoses: Calendar Year 1980

Dx (ICD-9)	Diagnosis	Percent Admissions	Length of Stay	Charge/ Day	Reimbursement/Day*
436x	Cerebrovascular disease	13.4%	$ 35 (29)	$76 (43)	$41 (28)
8208	Unspecified part of neck of femur, closed	11.9	34 (25)	73 (39)	42 (30)
4280	Congestive heart failure	3.6	22 (22)	70 (44)	41 (28)
4140	Coronary atherosclerosis	2.7	26 (25)	64 (33)	36 (23)
2500	Diabetes mellitus	2.0	31 (28)	67 (42)	37 (73)
486x	Pneumonia	1.8	23 (23)	66 (42)	37 (29)
8202	Pertrochanteric fracture, closed	1.6	36 (26)	72 (36)	41 (27)
496x	Chronic airway obstruction	1.5	23 (23)	79 (55)	42 (29)
8210	Shaft or unspecified part, closed	1.4	37 (27)	75 (40)	42 (30)
5990	Urinary tract infection	1.2	26 (25)	58 (28)	34 (26)
3109	Mental disorders following brain damage	1.2	29 (28)	60 (33)	33 (23)
1629	Malignant neoplasm of bronchus and lung	1.1	22 (22)	74 (50)	44 (27)
7368	Deformities of other parts of limbs	1.1	38 (29)	79 (49)	48 (37)
7070	Decubitus ulcer	1.1	43 (33)	75 (49)	41 (28)
v549	Unspecified orthopedic aftercare	1.0	35 (27)	80 (42)	47 (35)
7159	Osteoarthrosis	0.8	23 (21)	91 (51)	54 (39)
7999	Unknown	2.7	17 (16)	87 (59)	56 (38)
	All others	49.1	27 (25)	74 (47)	43 (34)
	Total	100.0 (278,849)	$ 29 (26)	$74 (45)	$42 (33)

* Does not include beneficiary cost sharing.

Standard deviations in parentheses.
Source: Health Care Financing Administration, Bureau of Data Management and Strategy.

relatively few admissions. To explore this issue, we weighted the average charge per day and payment per day for each diagnosis by its corresponding frequency to determine how variable these measures would be if payment were based on diagnostic groups.

The mean covered lengths of stay of the 17 most prevalent diagnoses are also shown in Table 26. The mean LOS for all of the admissions in 1980 was 29 days with a standard deviation of 26 days. The range in average LOS was between 22 days for malignant neoplasm of bronchus and lung and congestive heart failure and 43 days for decubitus ulcer. The LOS within each diagnosis varied dramatically, as reflected by the large standard deviations. For all of the most prevalent diagnoses, the standard deviations are about equal to the means. This result implies that for a given diagnosis with, for example, a mean LOS of 30 days, two-thirds of the cases would have lengths of stay ranging between 1-60 days. These results indicate that LOS varies considerably around the average for any given diagnosis, particularly since the possible range of LOS is only 1-100 days because of coverage limits.

The mean total charge per covered day in 1980 was $74. Among the most prevalent diagnoses in Table 26, the average charge per day ranged from a low of $58 for urinary tract infection to a high of $91 for osteoarthrosis. The standard deviations within specific diagnoses for charge per day were approximately 60 percent of the mean indicating substantial heterogeneity in charges within diagnoses. Moreoever, when the diagnosis specific charges per day are weighted by the frequency of cases with the corresponding diagnosis, most of the admissions (61 percent) fall within 5 percent of the overall national average per diem charge.

The average reimbursement per day in 1980 was $42, with a range among the most prevalent diagnoses of $33 for mental disorders following brain damage to $54 for osteoarthrosis. The standard deviations within specific diagnoses for reimbursement per day were approximately 75 percent of the mean indicating substantial heterogeneity in payment amount for cases with the same diagnosis. Similar to the situation with charge per day, weighting the diagnosis specific payment per day by corresponding numbers of cases results in most of the cases (71 percent) falling within 5 percent of the overall national average payment per day.

Beyond the variability in the relationships between primary diagnosis and LOS, charge per day, and payment per day discussed above, we explored the potential effects of (a) the presence of a secondary diagnosis and (b) the possibility that certain diagnoses resulted in longer than average lengths of stay. Neither of these analyses provided additional insights on which a potential diagnosis-based casemix adjustment could be developed. The presence of secondary diagnoses was examined to determine if LOS, charges, and payments varied for admissions with and without recorded secondary diagnoses. Our findings indicated that this variable was not significant. The frequency of specific diagnoses among patients that had 91-100 Medicare covered days is similar to those in the total cohort.

These general findings about diagnoses are consistent with a preliminary multivariate regression analysis of SNF charges and Medicare covered days per stay. Using individual patient stay records, the analysis found that diagnosis consistently explained only six percent or less of the variance in charges per stay, charges per day, and covered days per stay.

In summary, these findings suggest that variations in resource use appear to be as great among patients with the same diagnosis as they are among patients with

different diagnoses. When cases are grouped by diagnosis, charge per day and payment per day for most of the admissions are very close to the national averages, indicating that SNF diagnosis does not explain resource use in a vast majority of the cases. It is apparent that other factors such as disability affect the broad distributions in LOS, charges, and reimbursements per day. In addition, preliminary analyses indicate that great variations exist across States, and among hospitals within a state, in the proportion of hospital patients with a given diagnosis who are admitted to a SNF. The causes underlying these variation are currently unspecified but may include SNF bed availability, physician practice patterns, home health agency availability, and an emphasis on use of intermediate care facilities.

C. Summary: Incorporating Casemix in Prospective Payment for SNFs under Medicare

This chapter has reviewed research on the effects of casemix on the consumption of resources in nursing homes and examined the possibilities of using routinely collected data, such as diagnoses, to measure casemix in Medicare SNFs. The research literature on the allocation of care resources (e.g., nursing hours) to patients indicates that on average more resources are being provided to high need patients. This results in a desirable cost differential for facilities serving high need patients and suggests that casemix is associated with cost in nursing homes.

While the conceptual justification for including casemix adjustments in any SNF prospective payment system under Medicare is sound, the method by which it can be accomplished at this time is limited by available information. Our review of the literature on casemix determinants of resource consumption indicates that levels of disability and service requirements are important determinants of resource use in long term care. However, since the only patient casemix data reported by providers

at the present time is diagnosis -- and DRGs are based largely on diagnosis — an examination of the potential utility of diagnosis as a casemix measure was performed using Medicare data. The results suggested that there is very wide variation in the length of stay, payment, and charge amount among Medicare SNF patients with the same diagnosis. The implication of this finding is that diagnosis per se would not be a good discriminator of costs, since there are likely to be other factors working in conjunction with diagnosis to create such wide variations in both resource utilization and costs. As another facet of this analysis, we found that if diagnosis were to be employed as the casemix measure in a prospective payment system the result would be that 71 percent of the Medicare SNF admissions would be paid about the national average for all cases. Hence, the greatest variations between diagnoses occur for those diagnoses associated with relatively few Medicare SNF admissions.

The key issue in the assessment of a possible casemix measure for Medicare SNFs is the extent to which casemix affects costs. Differences in costs across facilities participating in the Medicare SNF program reflect casemix differences, but could also reflect their ability to provide care efficiently. The information necessary to produce definitive answers is currently not available. In contrast to our recommendation for hospital prospective payment based on DRGs, we do not currently have a tested patient-specific casemix adjustment for Medicare SNF payments.

We did find that the proportion of Medicare patient days to total facility days was positively associated with cost, suggesting that Medicare patients require greater resources than non-Medicare patients. This factor is conceptually consistent with the nature of the Medicare SNF benefit, which is to provide skilled nursing or rehabilitative care for individuals who would otherwise require continued and higher

cost hospital care. Likewise, it is consistent with the long term care purposes for which non-Medicare patients use nursing homes. Of equal importance in terms of practical casemix adjustment, HCFA currently collects the information necessary to construct this variable for all participating SNFs. Our assessment of the available data suggests that a casemix adjustment based on the proportion of Medicare days may be the most efficacious proxy measure available at this time.

CHAPTER V

HOSPITAL-BASED AND FREESTANDING SKILLED NURSING FACILITIES

Costs in hospital-based skilled nursing facilities in 1981 were approximately twice those of freestanding facilities. Believing that this differential was not justified, Congress, as part of TEFRA in 1982, mandated that Medicare pay no more for skilled nursing facility care than would be paid using only the cost experience of freestanding facilities. However, concerned about the possibility that the higher costs of hospital-based facilities were due to their care of sicker patients, Congress later postponed the implementation of the single reimbursement limit and mandated the Department of Health and Human Services to study whether the casemix differences between hospital-based and freestanding facilities justified the differences in cost. In the recently enacted Deficit Reduction Act of 1984, Congress effectively rescinded the TEFRA single reimbursement limits and prescribed new limits. It also reiterated its mandate for a study on possible casemix differences between hospital-based and freestanding SNFs.

As required by section 605 of the Social Security Amendments of 1983 and section 1888 of the Deficit Reduction Act, this chapter examines the differences in casemix between hospital-based and freestanding skilled nursing facilities. This chapter presents relevant program data and reviews findings from six outside studies on casemix in hospital-based and freestanding facilities. Based on program data and the outside studies commissioned for this Report, it appears that hospital-based facilities tend to serve more severely ill patients (i.e., have a more difficult casemix) than do freestanding facilities. Casemix differences, however, explain only a portion of the cost differences between the two types of facilities.

A. Background

1. Reimbursement Policies Prior to the Deficit Reduction Act of 1984

Section 223 cost limits for SNFs were first implemented on October 1, 1979. Beginning with the initial implementation of section 223 limits on SNF inpatient routine costs, separate reimbursement limits were applied to hospital-based and freestanding SNFs. These limits were derived separately for hospital-based and freestanding facilities on the basis of the cost reports submitted by the two types of providers. These separate limits were implemented because hospital-based SNFs commented that their higher incurred costs were due to the allocation of overhead costs required by the Medicare reimbursement principles and higher intensity of care.

The separate limits were maintained until section 102 of TEFRA (P.L. 97-248) mandated a change to a single set of limits based on freestanding SNF costs. The single set of limits became effective for periods beginning on or after October 1, 1982. The underlying assumption of this statutory change was that hospital-based and freestanding facilities provided the same service to the same set of patients.

The Conference Report for P.L. 97-248 specified that exceptions could be made on the basis of legitimate differences in hospital-based and freestanding SNFs, such as more complex casemix and overhead allocation costs for hospital-based SNFs. In order to determine if any add-on to the single limits was appropriate for hospital-based facilities, HCFA investigated the relationships between Medicare cost allocation rules and the higher hospital-based SNF costs. The results of this study indicated that some portion of the cost difference between hospital-based and

freestanding SNFs was attributable to overhead allocations resulting from Medicare reimbursement principles. This factor accounted for 8.8 percent of the higher routine operating costs of hospital-based SNFs in urban areas and 7.5 percent of the higher routine operating costs in rural areas. Adjustments in the reimbursement for hospital-based facilities were made according to this finding. HCFA did not routinely adjust for potential cost differences due to casemix because of the lack of reliable data on which to base such adjustments.

Concerned about the possible adverse effects on hospital-based SNFs of the single limit, Congress, in section 605 of the Social Security Amendments of 1983 (P.L. 98-21), postponed the effective date of the single limits until October 1, 1983. It also mandated the Department of Health and Human Services to study the effect which the provision "would have on hospital-based skilled nursing facilities, given the differences (if any) in the patient populations served by such facilities and by community-based skilled nursing facilities."

2. The Deficit Reduction Act of 1984

The recently enacted Deficit Reduction Act of 1984 effectively rescinded TEFRA's single reimbursement limits by providing that, for cost reporting periods beginning on or after October 1, 1982, and prior to July 1, 1984, "the cost limits for routine services for urban and rural hospital-based skilled nursing facilities shall be 112 percent of the mean of the respective routine costs for urban and rural hospital-based skilled nursing facilities." For periods on or after July 1, 1984, the Act specified that the reimbursement limits for urban and rural hospital-based SNFs respectively, should be equal to the sum of the corresponding limits for freestanding SNFs plus 50 percent of the amount by which 112 percent of the mean per

diem routine service costs for hospital-based SNFs exceeds the limit for freestanding SNFs. In addition, the Deficit Reduction Act provided for the recognition, as reasonable cost, of the portion of cost differences between hospital-based and freestanding SNFs attributable to overhead allocation from Medicare reimbursement principles, notwithstanding the limits on routine service costs. The Deficit Reduction Act's SNF reimbursement provisions superceded TEFRA's single limit provision, and effectively extended the pre-TEFRA dual limits to July 1, 1984.

3. Impact of TEFRA and Deficit Reduction Act Limits on Hospital-Based SNFs

Section 102 of TEFRA required that Medicare reimbursements for hospital-based SNFs be subject to the section 223 cost limits of freestanding SNFs. Since the average routine operating costs of freestanding facilities is considerably lower than that of their hospital-based counterparts, the impact of TEFRA on reimbursement to hospital-based SNFs would be expected to be substantial. The magnitude of TEFRA's and the Deficit Reduction Act's impact on hospital-based SNFs is illustrated by Table 27 which presents the estimated 1984 Medicare revenues to hospital-based SNFs under three scenarios: (1) when reimbursements for hospital-based and freestanding SNFs are based on 112 percent of their respective average routine operating costs (pre-TEFRA—dual limits); (2) when freestanding and hospital-based SNFs are reimbursed on the basis of 112 percent of the average routine operating costs of freestanding SNFs including a small hospital overhead allocation add-on adjustment (TEFRA) and (3) when reimbursement for hospital-based SNFs are based on 112 percent of the average routine operating costs of freestanding SNFs plus 50 percent of the amount by which 112 percent of the mean costs for hospital-based SNFs exceeds the limit for freestanding SNFs and an add-on for overhead allocation (Deficit Reduction Act).

Table 27: Estimated Impact on Hospital-Based SNFs of Various Cost Limits: FY 1984*

	Hospital-Based SNFs			Freestanding SNFs
	Dual Limits[1]	Single Limits[2]	Freestanding plus 50%[3]	Single and Dual Limits[4]
Medicare Revenues Before Imposition of Limits**	$302 mil.	$302 mil.	$302 mil.	$554 mil.
Medicare Revenues After Imposition of Limits	$266 mil.	$193 mil.	$236 mil.	$516 mil.
Dollar Loss as a Result of Limits	$ 36 mil.	$109 mil.	$ 66 mil.	$ 38 mil.
Percent Dollar Loss as a Result of Limits	12%	36%	22%	7%
No effect	68%	16%	48%	74%
1-10%	11	14	12	11
11-20%	8	17	14	1
21+%	13	53	26	8
Total	100%	100%	100%	100%

* Estimated full-year impact. No phase-in by provider accounting year, no cash lags, and no exceptions.

** Inclusive of cost sharing.

1. Dual Limits refers to section 223 limits calculated separately for hospital-based and freestanding facilities.

2. Single Limits refers to section 223 limits calculated using only the costs of freestanding facilities. Hospitals receive an add-on for increased costs due solely to Medicare allocation principles.

3. Freestanding plus 50 percent refers to section 223 limits calculated using the costs of freestanding facilities plus 50 percent of the amount by which 112 percent of the mean costs of hospital-based SNFs exceeds the limit for freestanding SNFs. Hospitals receive an add-on for increased costs due solely to Medicare allocation principles.

4. Freestanding facilities have the same 223 ceilings under both dual and single limits.

Source: Urban Institute Medicare SNF Cost Study, 1983.

The expected Medicare revenues for hospital-based facilities would have been $266 million when reimbursement is based on the average costs of the hospital-based facilities. After TEFRA, the Medicare revenues to hospital-based SNFs would have totaled $193 million. Hence, the full impact of the TEFRA single limits on hospital-based SNFs is a $73 million dollar loss in Medicare revenues. The percentage dollar loss to the hospital-based SNFs increased from 12 percent to 36 percent. The percentage dollar loss to freestanding facilities is 7 percent.

Table 27 also presents the distribution of hospital-based SNFs by the amount of dollar loss. While 68 percent of these SNFs did not experience dollar losses when cost limits were based on the experience of hospital-based facilities, this percentage drops to 16 percent under single limits. Moreover, while 13 percent of the hospital-based SNFs experienced a dollar loss that exceeded 21 percent of their costs before TEFRA, 53 percent of the facilities will experience dollar losses of this magnitude under single limits. On the other hand, 8 percent of the freestanding facilities experience a loss of this order.

The Deficit Reduction Act's reimbursement provisions increase Medicare revenues for hospital-based SNFs relative to the amounts allowable under TEFRA's single limits, but hospital-based SNFs still receive less reimbursement than they would have under the pre-TEFRA dual limits. Column 3 in Table 27 shows that the Medicare revenues to hospital-based SNFs would total $263 million, resulting in a dollar loss of $30 million in comparison to the $73 million loss under TEFRA. The percentage dollar loss to hospital-based SNFs decreases from 36 percent under TEFRA to 22 percent under the Deficit Reduction Act. In addition, 48 percent of hospital-based facilities would experience no loss in Medicare revenues under the Deficit Reduction Act in contrast to only 16 percent with no losses under TEFRA.

4. Medicare Utilization and Costs

Of the 3,500 Medicare participating SNFs with sufficient numbers of Medicare patients to submit cost reports to HCFA in 1980, 14 percent are hospital-based facilities. These 488 hospital-based facilities are equally divided between urban and rural settings, in contrast to freestanding SNFs which are located predominantly (79 percent) in urban areas. Table 28 shows that 7 percent of the participating SNFs in urban areas are hospital-based, while 28 percent of the rural SNFs are hospital-based.

While the hospital-based facilities contain only 10 percent of the Medicare certified beds, they account for 20 percent of total Medicare SNF days. This reflects the higher Medicare use of hospital-based facilities. Table 29 shows that whereas freestanding SNFs had an average Medicare use rate (proportion Medicare patient days to total patient days) of 13 percent, hospital-based SNFs had a use rate of 23 percent. Table 29 also shows that urban hospital-based facilities had the highest Medicare use rate (34 percent), in comparison to their rural counterparts (20 percent) and to freestanding facilities in either urban (13 percent) or rural (11 percent) settings. These results suggest that hospital-based facilities, while being relatively small in number relative to freestanding SNFs, are an important site of care for Medicare SNF patients. The hospital site of care for Medicare SNF patients will undoubtedly be further taxed as hospitals seek a discharge site for patients no longer needing acute care.

Table 30 presents the average costs for hospital-based and freestanding SNFs by major cost categories. The average per diem costs weighted by Medicare days are used in the establishment of section 223 cost limits for SNF payment and provide the most useful comparisons. The total estimated cost of hospital-based SNFs in

Table 28

Number of Medicare SNFs by
Type of Facility and Location, FY 1980

	Urban		Rural		Total	
	Number	Percent	Number	Percent	Number	Percent
Hospital Based	245	6.78	243	27.71	488	13.97
Freestanding	2,370	93.22	634	72.29	3,004	86.03
Total	2,615	100.00	877	100.00	3,492	100.00

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 29

Average Percentage of Inpatient Days that are Medicare Days, by Facility Type and Location, FY 1980

	Urban		Rural		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Hospital Based	33.7	33.8	19.5	27.7	22.6	31.6
Freestanding	13.3	20.1	11.4	16.1	12.9	19.4
Total	15.2	13.7	13.6	20.3	14.8	22.0

S.D. = Standard Deviation.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 30

Average Facility Per Diem Costs
By Type of Facility: FY 1983

Freestanding

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating	$45.76	$14.30	$48.37	$24.29	$47.51	$30.24
Routine Nursing	18.77	6.16	19.86	10.60	19.03	11.36
Routine Overhead	26.99	9.24	28.50	15.44	28.48	20.28
Medicare Ancillary	11.39	3.98	14.12	15.28	11.33	14.55
Drugs and Supplies	5.26	5.14	6.58	8.50	4.62	8.95
Therapy	6.13	6.28	7.54	11.09	5.71	11.09
Capital Costs	3.98	2.49	4.46	4.27	3.96	4.40
Total Costs	$61.12	$18.01	$66.95	$32.63	$61.80	$34.32

Hospital-Based

	Unweighted		Weighted by Medicare Days		Weighted by Total Days	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Routine Operating	$77.88	$33.40	$94.98	$65.97	$74.49	$40.38
Routine Nursing	29.86	13.95	36.85	27.69	27.74	15.32
Routine Overhead	48.01	21.14	58.14	42.31	46.75	27.07
Medicare Ancillary	22.32	19.16	29.75	44.63	19.18	24.87
Drugs and Supplies	8.37	7.80	8.18	13.85	6.53	10.46
Therapy	13.95	15.91	21.57	37.94	12.64	21.18
Capital Costs	5.11	5.12	6.78	11.41	4.10	4.97
Total Costs	$105.31	$50.05	$131.51	$102.70	$97.76	$58.21

S.D. = Standard Deviation.

Totals may not add due to rounding.

Source: Urban Institute Medicare SNF Cost Study, 1983.

1983 ($131) is twice as high as that of freestanding facilities ($67). This two-to-one ratio is recorded for virtually all cost categories, with the notable exception of the two ancillary cost categories. While hospital-based SNFs have slightly higher costs for drugs and supplies ($8.18) than those of freestanding SNFs ($6.58), the costs for therapy are almost three times higher in hospital-based facilities ($21.57 versus $7.54). The standard deviations presented in Table 30 indicate that there is wide cost variation within the hospital-based and freestanding groups respectively. In general, there is greater variability around average costs among the hospital-based SNFs.

The cost differences between hospital-based and freestanding SNFs are generally consistent in comparisons of facilities in urban and rural locations, although the cost differentials are smaller in rural areas (Table 31). Notably, the costs of therapy in hospital-based SNFs are three times those of freestanding facilities in urban areas, while only two times as high in rural areas. These results suggest that hospital-based and freestanding SNFs are more similar to each other in rural areas and that hospital-based SNFs in urban areas are particularly oriented toward the provision of rehabilitation care.

B. Indication of Casemix Difference from Program Data

The unavailability of routinely collected data on patient disability and specialized treatments precludes a definitive assessment of the casemix differences between hospital-based and freestanding SNFs under Medicare. However, the observed differences in proxy measures may reflect casemix differences. Specifically, higher casemix related costs of hospital-based facilities are suggested by their higher proportion of Medicare patients and higher nursing hours per patient day relative to freestanding facilities.

Table 31: Average Facility Per Diem Costs (Weighted by Medicare Days) by Facility Type and Location: FY 1983

	Urban		Rural	
	Hospital-Based	Free-standing	Hospital-Based	Free-standing
Routine Operating Costs	$114.18	$54.75	$65.07	$40.02
Routine Nursing	43.91	22.40	25.83	16.76
Routine Overhead	70.27	32.36	39.24	23.26
Medicare Ancillary	35.58	16.26	19.83	9.78
Drugs and Supplies	8.64	7.45	8.51	4.78
Therapy	26.94	8.81	11.32	5.00
Capital Costs	7.60	5.31	4.81	4.33
Total Costs	$157.36	$76.33	$89.71	$54.13

Source: Urban Institute Medicare SNF Cost Study, 1983.

In the analysis of Medicare SNF costs (Chapters II and IV), we found proportion of Medicare days to total days significantly and positively associated with costs. That is, the higher the proportion of Medicare days, the higher the cost. The reason for this association is the fact that Medicare patients are in nursing homes for short-term rehabilitative care which is likely to be more expensive than the maintenance care for chronic conditions of long term care patients in SNFs. Since Medicare reimbursement is based on the average costs of all patients (Medicare and non-Medicare) using Medicare certified beds, SNFs with higher proportions of Medicare patients would be expected to exhibit higher costs. Since the hospital-based facilities average almost twice the percent of Medicare patient days as do freestanding facilities (Table 29), some portion of their higher costs would be expected to be due to their higher proportion of Medicare patients.

Beyond differences in the percent of Medicare patients in hospital-based and freestanding facilities, the effects of percent Medicare on costs also differ between these two facility types. Percent Medicare is a much stronger predictor of costs and the amount of cost difference by percent Medicare is much larger in hospital-based than freestanding SNFs. Table 32 presents multivariate regression results of the effects of percent Medicare and geographic location on wage adjusted routine operating costs. The table shows that percent Medicare and geographic location explain 45 percent (R^2= .45) of the variation in costs among hospital-based facilities and only 7 percent (R^2= .07) of the cost variation in freestanding facilities. It also shows that each percentage difference in Medicare days is equivalant to an incremental per diem cost of 56 cents in hospital-based facilities and 16 cents in freestanding facilities. These results suggest that, in comparison to freestanding SNFs, hospital-based SNFs' costs are much more responsive to their Medicare casemix as reflected by percent Medicare patient days.

Table 32: Determinants of Wage Adjusted Routine Operating Per Diem Costs: FY 1980

	All Facilities	All Facilities	Hospital-Based	Freestanding
R^2	.46	.21	.45	.07
Intercept	39.15 (118.38)	40.35 (101.60)	65.52 (39.10)	40.22 (136.70)
Percent Medicare	.29 (25.45)	.39 (20.41)	.56 (18.32)	.16 (14.27)
Rural	.53 (.90)	6.12 (9.00)	-7.20 (-3.75)	3.10 (5.67)
Hospital-Based	29.64 (39.81)	— —	— —	— —

T-statistics in parentheses.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Hospital-based facilities also have a higher patient turnover rate than freestanding facilities. Table 33 shows, for example, that 21 percent of hospital-based facilities have six admissions per bed per year in contrast to 13 percent of freestanding facilities. This higher turnover rate is consistent with the notion that hospital-based SNFs tend to serve short-term rehabilitation patients who tend to be more costly than long term care patients on a per day basis.

The second indication from the program data that differences between hospital-based and freestanding SNFs may be associated with casemix differences is the variation in staffing between the two types of providers. Table 34 shows that for the sample of facilities for which these data are available, hospital-based SNFs provide an average of 3.90 nursing hours per day (by licensed nurses and aides) in contrast to 3.27 hours per day by freestanding facilities. Additionally, Table 34 shows that the differential in nursing hours is greater between hospital-based and freestanding facilities which serve relatively high proportions of Medicare patients. Specifically, among the SNFs with more than 20 percent Medicare patient days, hospital-based SNFs provide on average 4.68 hours of nursing per inpatient day while freestanding facilities provide 3.48 hours of nursing per inpatient day.

While Table 34 showed differences in overall nursing hours between hospital-based and freestanding SNFs, substantial differences also exist between these two types of providers in their staffing of licensed nurses (i.e., registered and licensed practical nurses). Table 35 presents the patterns of licensed nurse to bed ratios. Approximately 20 percent of urban and 16 percent of rural freestanding facilities have licensed nurse to bed ratios that are below one nurse per 14 beds. In contrast, 3 percent of the urban and less than 2 percent of the rural hospital-based facilities are below this level. At the other end of the spectrum, approximately 60 percent of

Table 33

Total Annual Admissions Per Bed,
by Type of Skilled Nursing Facility: FY 1980

Annual Total Admissions Per Bed*	Freestanding		Hospital-Based		Total	
	N	Percent	N	Percent	N	Percent
0 - .99	1,029	34.25	198	40.57	1,227	35.14
1.00 - 2.99	1,185	39.45	127	26.02	1,312	37.57
3.00 - 5.99	407	13.54	62	12.70	469	13.43
6.00+	383	12.75	101	20.70	484	13.86
Total	3,004	100.00	488	100.00	3,492	100.00

*Includes both Medicare and non-Medicare admissions.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 34: Nursing Hours Per Inpatient Day, by Proportion of Total Inpatient Days that are Medicare: FY 1980

	20% Medicare		20% Medicare		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Freestanding	3.18	0.64	3.48	0.69	3.27	.67
Hospital-based	3.47	0.88	4.68	1.06	3.90	1.10
Total	3.22	0.69	3.72	0.91	3.37	.80

S.D.= Standard Deviation.

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 35: Nursing Staffing Patterns in Medicare Freestanding and Hospital-based SNFs, by Location: FY 1980

Nursing Ratios	Urban		Rural	
	Free-standing	Hospital-based	Free-standing	Hospital-based
1 Nurse to 14 or More Beds	19.7%	3.0%	16.0%	1.7%
1 Nurse to 10-13 Beds	22.4	5.7	21.3	6.1
1 Nurse to 9 or Fewer Beds	57.8	91.3	62.7	92.2
Total*	100.0%	100.0%	100.0%	100.0%
Number of Facilities	2314	231	618	233

*Totals may not add due to rounding.

Source: Medicare and Medicaid Automated Certification System (MMACS) Data Base.

the freestanding facilities in both urban and rural areas have nurse to bed ratios that are above one nurse per nine beds, while over 90 percent of the hospital-based facilities are above this level.

Table 36 shows that substantial differences also exist between hospital-based and freestanding SNFs in their orientation and staff capacity to provide rehabilitation and other professional services. The most distinctive pattern is that of the urban hospital-based facilities, 51 percent of which have personnel on staff to provide at least two rehabilitative services compared to 17 percent of urban freestanding facilities. Urban hospital-based facilities are about twice as likely to directly offer rehabilitation services as either freestanding or rural hospital-based facilities. This difference explains, in part, the higher average ancillary costs of urban hospital-based facilities.

While the observed differences in nursing and rehabilitation personnel suggest that there may be casemix differences between hospital-based and freestanding SNFs participating in the Medicare program, firm conclusions cannot be drawn from these comparisons. An alternative explanation for these findings is that the staffing patterns observed simply reflect the conventional staffing practices of the provider types rather than casemix differences.

Table 36: Patterns of Rehabilitation and Other Professional Services in Medicare Freestanding and Hospital-Based Facilities: FY 1980

Services*	Urban		Rural	
	Free-standing	Hospital-based	Free-standing	Hospital-based
No Rehabilitation Services	59.3%	29.8%	68.2%	54.4%
One Rehabilitation Service	23.5	19.6	24.0	26.6
Two Rehabilitation Services and one Other Professional Discipline	17.1	50.6	7.8	19.0
Total **	100.0%	100.0%	100.0%	100.0%
Number of Facilities	2314	231	618	233

*Services include physical therapy, occupational therapy, dietary.

**Totals may not add due to rounding.

Source: Medicare and Medicaid Automated Certification System Data Base.

C. Studies on the Casemix Differences Between Hospital-Based and Freestanding Nursing Homes

This section highlights the findings of six outside studies as they relate to possible casemix differences between hospital-based and freestanding SNFs. These studies analyzed data from:

1. A sample of high Medicare utilization SNFs (Shaughnessy et al., 1983)
2. A sample of Medicare SNFs in Oregon and Massachusetts (Mor and Sherwood, 1983)
3. Data from the Medicare and Medicaid Automated Certification System (Sulvetta and Holahan, 1984)
4. All Medicaid cost reports from New York and Ohio (Urban Institute, 1983)
5. A sample of California nursing homes (Cameron and Knauf, 1982)
6. A sample Colorado of nursing homes (Shaughnessy, et al., 1982)

The first study collected patient characteristics information on Medicare patients as well as on other patients who resided in Medicare certified portions of nursing homes. The second study focused exclusively on casemix differences among Medicare patients. The third study included data on all patients in Medicare certified facilities but these facilities could be stratified by percent Medicare. In the last three studies, casemix characteristics of the facilities refer to Medicaid or the general nursing home population. Thus, inferences from these last studies about the casemix differences between hospital-based and freestanding facilities for Medicare patients are tentative in nature.

1. Shaughnessy et al., (1983): The Medicare Casemix Study examines casemix differences between hospital-based and freestanding skilled nursing facilities that treat substantial numbers of Medicare patients and differences between Medicare and non-Medicare patients in these facilities. The sample includes 10 hospital-based and 10 freestanding nursing homes from five states (California, Pennsylvania, Ohio, Michigan, and Texas). Primary data were collected on a total of 623 patients, including 308 hospital-based patients and 315 freestanding patients. By payment source, 357 were Medicare patients and 266 were non-Medicare patients. All patients in this study were in Medicare certified beds.

Data were collected on both facilities and patients. Facility data included general facility characteristics such as number of certified beds and ownership. Patient specific data included characteristics such as age, sex, date of admission, level of care, and admitting diagnosis. In all, information was collected on the presence and severity of 10 activities of daily living (ADLs) and 24 long term care problems (i.e., patient condition reflecting need for medical or functional assistance). In addition, information was obtained on the provision of four ADL services, seven nursing services, and three ancillary services.

In the comparison of Medicare and non-Medicare patients, the study found major differences between the two groups (Table 37). Medicare patients were characterized by both more frequent and more severe medically oriented problems and diagnoses such as recovery from surgery, stroke, or hip fracture, and total number of medical and nursing problems. Considerably more Medicare than non-Medicare patients were classified as rehabilitative. This characterization of Medicare patients is consistent with the post-acute intent of the Medicare SNF benefit. The non-Medicare patients tended to be more dependent in functioning and have more

TABLE 37 : Patient-Level Characteristics for Medicare and Non-Medicare Patients in Medicare Certified Beds in High-Percent Medicare Facilities.

Means and Standard Deviations by Payment Source

Patient-Level Characteristics	Medicare			Non-Medicare			Significance[a]
	N	Mean	St. Dev.	N	Mean	St. Dev.	
Activities of Daily Living							
Bathing	357	3.84	1.25	266	4.13	1.14	.002
Dressing	356	2.37	.82	266	2.49	.78	.035
Transferring	356	2.88	1.23	266	3.13	1.44	.001
Walking	354	4.01	1.22	265	4.17	1.35	.002
Telephone	349	1.84	1.33	265	2.14	1.19	.012
Finances	343	1.51	.74	266	1.69	.64	.001
Katz Score Index	354	4.71	1.62	265	4.95	1.64	.017
Incontinence	357	.64	.48	265	.76	.43	.001
Dichotomized ADLs Major Assistance							
Bathing	357	.81	.40	266	.91	.28	<.001
Dressing	356	.86	.35	266	.91	.29	.069
Feeding	357	.37	.48	266	.45	.50	.041
Toileting	355	.93	.25	266	.88	.33	.016
Transferring	356	.58	.50	266	.68	.47	.008
Telephone	349	.52	.50	265	.59	.49	.072
Finances	343	.66	.48	266	.79	.41	<.001
Problem Severity Scale							
Bowel Incontinence	348	.99	.99	261	1.25	.93	.001
Urine Incontinence	217	.65	.89	173	1.06	.96	<.001
Mental Status	289	.79	.88	209	1.02	.89	.005
Mobility Impairment	357	1.49	1.23	266	1.74	1.26	.014
Total Immobility Score	357	7.75	6.53	266	9.14	7.33	.061
Sensory Deficits	354	.31	.52	264	.45	.62	.003
Hypertension	340	.30	.53	252	.18	.45	<.001
Diabetes Mellitus	354	.30	.65	266	.21	.60	.021
Recovery From Surgery	356	.19	.42	266	.07	.27	<.001
Depression	317	.33	.64	240	.49	.73	.006
Inadequate Social Support	346	.74	.56	264	.86	.69	.056

TABLE 37 (Cont'd.) Patient-Level Characteristics for Medicare and Non-Medicare Patients in Medicare Certified Beds in High-Percent Medicare Facilities.

Means and Standard Deviations by Payment Source

Patient-Level Characteristics	Medicare N	Medicare Mean	Medicare St. Dev.	Non-Medicare N	Non-Medicare Mean	Non-Medicare St. Dev.	Significance[a]
Mild Problem Dichotomies							
Bowel Incontinence	348	.51	.50	261	.66	.47	<.001
Urine Incontinence	217	.37	.48	173	.57	.50	<.001
Mental Status	289	.49	.50	209	.61	.49	.006
Sensory Deficits	354	.27	.45	264	.38	.49	.004
Hypertension	340	.27	.45	252	.16	.36	.001
Diabetes Mellitus	354	.21	.41	266	.13	.34	.015
Recovery From Surgery	356	.18	.39	266	.07	.25	<.001
Depression	317	.24	.43	240	.35	.48	.006
Severe Problem Dichotomies							
Heart Disease	357	.09	.29	266	.04	.20	.014
Depression	317	.09	.29	240	.14	.35	.064
Inadequate Social Support	346	.06	.24	264	.18	.38	<.001
Problem Totals							
Total Incontinence Problems	355	1.13	.92	264	1.40	.84	<.001
Total Medical/ Nursing Problems	348	.83	.91	254	.57	.79	.001
Medical/Nursing Problem Indicator	348	.56	.50	254	.42	.50	.001
Total Psychosocial Problems	310	.18	.44	234	.37	.56	<.001
Psychosocial Problem Indicator	310	.16	.37	234	.33	.47	<.001
Primary Diagnosis							
Neoplasms	355	.07	.25	266	.02	.14	.005
Mental Disorders	355	.01	.12	266	.05	.22	.010
Nervous System	355	.03	.18	266	.12	.33	<.001
Skin and Subcutaneous	355	.03	.18	266	.06	.25	.076
Fractures	355	.27	.45	266	.16	.37	.001
Other Injury	355	.05	.22	266	.02	.15	.074

TABLE 37 (Cont'd.) Patient-Level Characteristics for Medicare and Non-Medicare Patients in Medicare Certified Beds in High-Percent Medicare Facilities.

Means and Standard Deviations by Payment Source

Patient-Level Characteristics	Medicare			Non-Medicare			Significance[a]
	N	Mean	St. Dev.	N	Mean	St. Dev.	
Secondary Diagnoses							
Mental Disorders	318	.05	.22	251	.11	.31	.010
Nervous System	318	.04	.21	251	.08	.28	.051
Diagnostic Problem Groups							
Stroke	356	.35	.48	266	.26	.44	.015
Hip Fracture	356	.24	.43	266	.13	.34	<.001
Neoplasms	356	.08	.27	266	.03	.16	.004
Organic Brain Syndrome	356	.04	.19	266	.07	.25	.077
Paralysis Diagnosis	356	.01	.09	266	.04	.19	.012
Patient Characteristics							
Recent Length of Stay	357	34.89	23.50	266	419.74	580.87	<.001
Prognostic Category	352	.99	.92	263	1.70	.67	<.001
Level of Nursing Home Care	357	1.00	.00	258	.80	.40	<.001

[a]For dichotomous variables, the significance level is the exact p-value for the chi-square test for the difference between two proportions. For continuous or other ordinal variables the exact p-value for a two-tailed Wilcoxon two-sample test was used. The Wilcoxon two-sample test was used instead of the t-test since the Kolmogorov-Smirnov test indicated a significant ($p<.05$) departure from underlying normality.

Source: Shaughnessy, 1983.

traditional long term care problems, such as incontinence, mental problems, and sensory impairments.

The analysis of casemix differences between hospital-based and freestanding facilities based on all patients in Medicare certified beds showed that hospital-based patients were more dependent in activities of daily living such as walking, toileting, and transferring (Table 38). In addition, a substantially higher prevalence of shortness of breath problems and a higher proportion of intravenous catheters were found among hospital-based patients. In contrast, freestanding SNF patients tended to have more mental status problems, terminal illness, hypertension, and urinary tract infections. Patients with a shortness of breath problem comprised 45 percent of the hospital-based patients and 26 percent of the freestanding patients, and as a group received medications more frequently and had blood pressure monitored more closely. A greater proportion of hospital-based patients with this problem were dependent in walking and had intravenous catheters. In freestanding facilities, shortness of breath patients were more frequently regarded as custodial rather than rehabilitative patients, and tended to be more dependent in feeding.

* For Medicare patients only, moderate casemix differences exist between hospital-based and freestanding facilities (Table 39). Hospital-based Medicare patients were characterized by a greater prevalence of shortness of breath and certain other medically demanding conditions such as post-surgical treatment of such procedures as hip replacements and amputations. Among Medicare patients with diabetes mellitus, for example, a higher proportion of hospital-based patients were recovering from surgery than was the case for freestanding Medicare patients with diabetes. Since surgery in diabetics is often a result of the sequalae of the disease (e.g., leg amputation), it is likely that the Medicare patients with diabetes in

TABLE 38: Patient-Level Characteristics for Patients in Medicare-Certified Beds in High-Percent Medicare Free-Standing and Hospital-Based Facilities.

Patient-Level Characteristics	Means and Standard Deviations by Facility Type						
	Hospital-Based (HB)			Free-Standing (FS)			Signifi-cance[a]
	N	Mean	St. Dev.	N	Mean	St. Dev.	
Activities of Daily Living Variables							
Dressing	307	2.36	.83	315	2.48	.78	.057
Toileting	307	2.00	1.05	314	1.83	1.08	.050
Transferring	307	3.09	1.29	315	2.89	1.36	.048
Finances	299	1.53	.76	310	1.65	.64	.096
Transportation	307	2.69	.52	314	2.62	.50	.042
Dichotomized ADLs Major Assistance							
Transferring	307	.66	.48	315	.59	.49	.083
Walking	305	.82	.39	314	.75	.44	.031
Communication	305	.36	.48	315	.29	.46	.082
Telephone	299	.59	.49	315	.51	.50	.045
Transportation	307	.71	.45	314	.63	.48	.029
Problem Severity Scales							
Mental Status	237	.79	.86	261	.98	.91	.017
Mobility Impairment	308	1.71	1.24	315	1.48	1.25	.020
Total Immobility Score	308	8.85	6.72	315	7.84	7.06	.019
Hypertension	307	.20	.45	285	.31	.55	.009
Shortness of Breath	308	.60	.80	314	.39	.78	<.001
End Stage Disease	305	.03	.18	310	.08	.31	.003
Inadequate Social Support	299	.88	.59	311	.71	.64	<.001
Mild Problem Dichotomies							
Mobility Impairment	308	.74	.44	315	.67	.47	.067
Hypertension	307	.18	.38	285	.27	.44	.010
Shortness of Breath	308	.45	.50	314	.26	.44	<.001
Intravenous Catheter	307	.04	.20	315	.01	.11	.023

TABLE 38 (Cont'd.) Patient-Level Characteristics for Patients in Medicare-Certified Beds in High-Percent Medicare Free-Standing and Hospital-Based Facilities.

Patient-Level Characteristics	Means and Standard Deviations by Facility Type						
	Hospital-Based (HB)			Free-Standing (FS)			Significance[a]
	N	Mean	St. Dev.	N	Mean	St. Dev.	
Mild Problem Dichotomies (cont'd)							
Urinary Tract Infection	303	.05	.22	314	.10	.29	.028
End Stage Disease	305	.02	.15	310	.07	.26	.003
Inadequate Social Support	299	.88	.59	311	.71	.64	<.001
Problem Totals							
Psychological Problem Indicator	275	.84	.37	269	.72	.45	.001
Patient Characteristics							
Age	308	74.47	14.46	314	79.21	10.89	<.001
Level of Nursing Home Care	307	.97	.18	308	.87	.34	<.001

[a]For dichotomous variables, the significance level is the exact p-value for the chi-square test for the difference between two proportions. For continuous or other ordinal variables the exact p-value for a two-tailed Wilcoxon two-sample test was used. The Wilcoxon two-sample test was used instead of the t-test since the Kolmogorov-Smirnov test indicated a significant ($p<.05$) departure from underlying normality.

Source: Shaughnessy, 1983.

TABLE 39: Patient-Level Characteristics for Hospital-Based and Free-Standing Medicare Patients[a] from the Medicare Case Mix Component.

Patient-Level Characteristics	Means and Standard Deviations by Facility Type						
	Hospital-Based (HB)			Free-Standing (FS)			
	N	Mean	St. Dev.	N	Mean	St. Dev.	Significance[b]
Activities of Daily Living Variables							
Dressing	169	2.72	.82	187	2.46	.80	.011
Finances	161	1.44	.78	182	1.58	.69	.093
Transportation	169	2.70	.48	187	2.58	.52	.018
Dichotomized ADLs Major Assistance							
Transportation	169	.72	.45	187	.59	.49	.016
Problem Severity Scales							
Mental Status	136	.64	.82	153	.93	.91	.007
Sensory Deficits	168	.25	.49	186	.36	.55	.054
Hypertension	169	.24	.48	171	.36	.56	.032
Shortness of Breath	170	.61	.80	187	.35	.76	<.001
End Stage Disease	168	.01	.08	186	.12	.36	<.001
Depression	158	.25	.56	159	.42	.70	.017
Inadequate Social Support	162	.84	.46	184	.66	.63	.001
Mild Problem Dichotomies[c]							
Mental Status	136	.42	.50	153	.55	.50	.027
Sensory Deficits	168	.23	.42	186	.32	.47	.055
Hypertension	169	.22	.42	171	.32	.47	.033
Shortness of Breath	170	.46	.50	187	.23	.42	<.001
End Stage Disease	168	.01	.08	186	.11	.31	<.001
Depression	158	.18	.39	159	.30	.46	.020
Inadequate Social Support	162	.80	.40	184	.57	.50	<.001
Severe Problem Dichotomies							
Depression	158	.06	.24	159	.12	.33	.083
Inadequate Social Support	162	.04	.19	184	.08	.27	.084
Problem Totals							
Total Psychosocial Problems	153	.12	.34	157	.24	.51	.016

TABLE 39 (Cont'd.) Patient-Level Characteristics for Hospital-Based and Free-Standing Medicare Patients[a] from the Medicare Case Mix Component.

Patient-Level Characteristics	Means and Standard Deviations by Facility Type						Significance[b]
	Hospital-Based (HB)			Free-Standing (FS)			
	N	Mean	St. Dev.	N	Mean	St. Dev.	
Psychosocial Problem Indicator	153	.11	.32	157	.21	.41	.018
Primary Diagnosis							
Neoplasms	169	.04	.20	186	.09	.29	.001
Digestive System	169	.00	.00	186	.03	.16	.032
Genitourinary System	169	.00	.00	186	.03	.18	.019
Musculoskeletal System	169	.00	.00	186	.02	.13	.097
Ill-Defined Condition	169	.03	.17	186	.00	.00	.018
Intracranial	169	.00	.00	186	.02	.13	.097
Others	169	.07	.26	186	.03	.16	.052
Secondary Diagnosis							
Endocrine	148	.18	.39	170	.11	.31	.051
Genitourinary System	148	.01	.12	170	.05	.23	.055
Ill-Defined Condition	148	.01	.12	170	.05	.23	.055
Fractures	148	.05	.23	170	.02	.13	.076
Diagnostic Problem Groups							
Paralysis Diagnosis	170	.00	.00	186	.02	.13	.096
Patient Characteristics							
Recent Length of Stay	170	32.01	22.27	187	37.52	24.33	.018
Age	170	77.30	8.41	186	79.07	9.48	.031
Prognostic Category	166	.83	.92	186	1.14	.91	.002

[a]Non-Medicare patients from Medicare certified beds.

[b]For dichotomous variables, the significance level is the exact p-value for the chi-square test for the difference between two proportions. For continuous or other ordinal variables the exact p-value for a two-tailed Wilcoxon two-sample test was used. The Wilcoxon two-sample test was used instead of the t-test since the Kolmogorov-Smirnov test indicated a significant ($p<.05$) departure from underlying normality.

Source: Shaughnessy, 1983.

hospital-based facilities required a greater intensity of nursing and medical care. For non-Medicare patients, a reasonably pronounced difference exists between hospital-based and freestanding facilities, with hospital-based patients characterized by greater dependency in functioning and traditional long term care problems (Table 40). In addition, non-Medicare hospital-based patients also tended to have more medical problems such as shortness of breath, intravenous catheters, and stroke.

The study concluded that Medicare patients need more highly qualified nursing personnel (i.e., greater nursing expertise) and that hospital-based patients need more nursing expertise than freestanding facility patients. Further, it appears that non-Medicare patients in hospital-based facilities also require greater quantities of other services in addition to requiring greater nursing expertise.

Further evidence from this study and two earlier studies on hospital-based and freestanding SNFs conducted by the University of Colorado indicates that casemix differences are responsible for up to 50 percent of the observed variations in resource consumption. Medicare patients and hospital-based patients are more costly to treat than other patients because of their more intense casemix. Unfortunately, the size of these differences cannot be precisely quantified at the present time. Because of the multidimensional characteristics of casemix for Medicare and non-Medicare patients in participating SNFs, Shaughnessy also concluded that all types of casemix indicators (measures of medical and traditional long term care problems, functional ability) must be taken into account in the development of casemix adjustments for Medicare payment.

TABLE 40: Patient-Level Characteristics for Hospital-Based and Free-Standing Non-Medicare Patients[a] from the Medicare Case Mix Component.

Patient-Level Characteristics	Means and Standard Deviations by Facility Type						
	Hospital-Based (HB)			Free-Standing (FS)			Signifi-cance[b]
	N	Mean	St. Dev.	N	Mean	St. Dev.	
Activities of Daily Living Variables							
Bathing	138	4.23	1.20	128	4.02	1.08	.057
Toileting	138	2.16	1.10	128	1.77	1.12	.004
Transferring	138	3.32	1.35	128	2.92	1.52	.019
Walking	137	4.26	1.36	128	4.07	1.34	.064
Incontinence	138	.80	.40	127	.72	.45	.093
Dichotomized ADLs Major Assistance							
Transferring	138	.76	.43	128	.59	.49	.004
Communication	137	.41	.49	128	.30	.46	.057
Telephone	137	.65	.48	128	.52	.50	.037
Problem Severity Scales							
Bowel Incontinence	137	1.38	.91	124	1.10	.93	.009
Mobility Impairment	138	1.98	1.20	128	1.48	1.27	.001
Total Immobility	138	10.28	7.08	128	7.90	7.41	.004
Sensory Deficits	137	.54	.62	127	.35	.61	.004
Shortness of Breath	138	.60	.80	127	.46	.80	.043
Inadequate Social Support	137	.93	.71	127	.78	.67	.077
Mild Problem Dichotomies							
Catheter	138	.40	.49	128	.30	.46	.082
Mobility Impairment	138	.80	.40	128	.65	.48	.007
Sensory Deficits	137	.47	.50	127	.28	.45	.001
Shortness of Breath	138	.44	.50	127	.32	.47	.033
Intravenous Catheter	137	.04	.21	128	.00	.00	.017
Urinary Tract Infection	136	.04	.19	128	.11	.31	.023
Severe Problem Dichotomies							
Inadequate Social Support	137	.22	.42	127	.13	.34	.071

TABLE 40: (Cont'd.) Patient-Level Characteristics for Hospital-Based and Free-Standing Non-Medicare Patients[a] from the Medicare Case Mix Component.

Patient-Level Characteristics	Means and Standard Deviations by Facility Type						
	Hospital-Based (HB)			Free-Standing (FS)			
	N	Mean	St. Dev.	N	Mean	St. Dev.	Significance[b]
Primary Diagnosis							
Genitourinary System	138	.01	.12	128	.06	.24	.040
Musculoskeletal System	138	.04	.21	128	.00	.00	.017
Fractures	138	.11	.31	128	.21	.41	.022
Secondary Diagnosis							
Other Injury	129	.06	.24	122	.08	.28	.090
Diagnostic Problem Groups							
Stroke	138	.31	.47	128	.20	.40	.044
Hip Fracture	138	.09	.28	128	.18	.39	.025
Patient Characteristics							
Age	138	70.99	18.95	128	79.41	12.70	<.001
Prognostic Category	136	1.79	.56	127	1.61	.76	.048
Level of Nursing Home Care	137	.93	.26	121	.66	.48	<.001

[a]Non-Medicare patients from Medicare certified beds.

[b]For dichotomous variables, the significance level is the exact p-value for the chi-square test for the difference between two proportions. For continuous or other ordinal variables the exact p-value for a two-tailed Wilcoxon two-sample test was used. The Wilcoxon two-sample test was used instead of the t-test since the Kolmogorov-Smirnov test indicated a significant ($p<.05$) departure from underlying normality.

Source: Shaughnessy, 1983.

2. Mor and Sherwood (1983): The comparison of the characteristics of hospital-based and freestanding Medicare SNF patients in this study was based upon secondary analysis of data gathered as part of a prior study. The earlier study (Birnbaum, et al., 1981) compared costs and outcomes in facilities in Oregon and Massachusetts. In order to maximize data gathering efficiency, only facilities with high Medicare utilization were used as the base for drawing the patient samples in both Oregon and Massachusetts. The final study sample included 27 facilities in Oregon of which five were hospital-based and 33 facilities in Massachusetts of which five were hospital-based.

The information on patient characteristics was derived from medical record abstract forms made available from the fiscal intermediaries in the respective States. Information from these forms included demographic and institutional background, discharge disposition and outcome, activities of daily living, and medical and nursing needs at admission.

The comparison between hospital-based and freestanding Medicare SNF patients in Oregon and Massachusetts is presented in Tables 41 and 42. There were relatively few significant differences between freestanding and hospital-based SNF patients in Oregon (Table 41). Among the functional status measures, the only difference that was found was that a higher proportion of freestanding patients were unable to transfer to bed. In addition, smaller proportions of persons in hospital-based SNFs had three or more medical symptoms than patients in freestanding SNFs. On the other hand, a significantly larger proportion of patients in hospital-based SNFs were admitted for rehabilitative reasons.

TABLE 41

Characteristics of Hospital-based and Freestanding Medicare SNF Patients (Oregon Sample)

Characteristics Sample Numbers	Free Standing	Hospital Based	Signif.
Demographic & Background	N=675	N=135	
Female	66.2	64.4	.7654
Married	28.3	32.6	.3680
Widowed	57.9	59.3	.8484
Had no prior SNF admissions	78.4	85.9	.0611
Has no children in area	34.4	28.1	.1936
Prior residence is Nursing Home	13.0	4.4	.0070
Prior residence is alone or with family (own home)	77.9	92.6	.0001
85 years old or more	32.3	30.4	.7352
Functional Status			
Walks without help	38.2	37.8	1.0000
Continent of Bladder	52.6	51.9	.9498
Catheterized	24.7	24.4	1.0000
Continent of Bowel	68.3	60.7	.1086
Unable to Transfer to Bed	53.9	40.0	.0042
Disoriented to time and place	15.9	18.5	.5234
Medical Signs/Nursing Needs			
Has four or more medical symptoms	2.4	0.0	.1421
Has three or more medical symptoms	7.4	2.2	.0420
Reason for Admission			
Adm. due to skilled nursing need	48.0	40.0	.1082
Adm. due to rehab need	16.9	26.7	.0111
Diagnostic Data			
Any cancer	17.3	14.8	.5573
Has metastatic cancer	13.0	8.9	.2324
Has pneumonia	4.9	7.4	.3265
Has fracture (recent)	28.9	32.6	.4485
Had recent CVA	30.1	27.4	.6057
Has Kidney-Renal Disease	15.9	15.6	1.0000
Has Heart Disease	49.9	48.9	.9000
Has Circulatory Ailments	11.0	14.1	.3750
Has Diabetes	10.8	7.4	.3001
Severity Level			
Most vulnerable	22.4	17.8	
Next most vulnerable	28.9	31.1	.4883
Next least vulnerable	20.0	17.8	
Least vulnerable	28.6	33.3	
Discharge Disposition			
Dead	27.0	23.0	.3866

Source: Mor and Sherwood, 1983.

Characteristics of Hospital-based and Freestanding Medicare SNF Patients (Massachusetts Sample)

Characteristics Sample Numbers	Free Standing	Hospital Based	Signif.
Demographic & Background	N=459	N=269	
Female	76.3	65.2	.0006
Married	23.5	32.2	.0053
Widowed	57.1	50.0	.0320
Had no prior SNF admissions	76.0	80.4	.0876
Has no children in area	38.1	35.9	.2767
Prior residence is Nursing Home	15.5	4.4	.0000
Prior residence is alone or with family (own home)	80.0	90.4	.0001
85 years old or more	34.4	18.1	.0000
Functional Status			
Walks without help	30.7	29.6	.3787
Continent of Bladder	46.4	55.9	.0066
Catheterized	28.5	17.4	.0004
Continent of Bowel	63.8	72.2	.0101
Unable to Transfer to Bed	78.6	84.4	.0276
Disoriented to time and place	17.0	9.3	.0019
Medical Signs/Nursing Needs			
Has four or more medical symptoms	4.4	5.5	.5814
Has three or more medical symptoms	13.6	17.4	.1874
Reason for Admission			
Adm. due to skilled nursing need	38.8	11.9	.0000
Adm. due to rehab need	52.0	61.0	.0226
Diagnostic Data			
Any cancer	15.9	9.6	.0085
Has metastatic cancer	10.9	6.3	.0191
Has pneumonia	0.4	0.4	.4471
Has fracture (recent)	39.4	31.5	.0157
Had recent CVA	29.2	37.8	.0084
Has Kidney-Renal Disease	7.6	5.9	.1927
Has Heart Disease	54.7	57.4	.2375
Has Circulatory Ailments	14.8	12.6	.2020
Has Diabetes	19.4	21.9	.2126
Severity Level			
Most vulnerable	33.3	15.2	.0000
Next most vulnerable	32.2	33.7	
Next least vulnerable	16.3	33.3	
Least vulnerable	18.1	17.8	
Discharge Disposition			
Dead	14.4	4.4	.0000

Source: Mor and Sherwood, 1983.

In the Massachusetts sample, patients entering hospital-based SNFs were very different from those entering freestanding SNFs; 19 of the 29 variables in Table 42 show statistically significant differences. The majority of hospital-based SNF patients were admitted because of rehabilitation needs, while significantly larger proportions of patients in freestanding SNFs were admitted for skilled nursing needs. Higher proportions of hospital-based patients were unable to transfer to bed. On the other hand, higher proportions of freestanding patients were incontinent, catheterized, and disoriented as to time and place. In addition, while higher proportions of the hospital-based patients had a recent stroke, freestanding facilities had higher proportions with cancer and recent fractures. From the findings of the two States, the authors concluded that characteristics of patients are not necessarily a function of whether the SNF is freestanding or hospital-based.

3. Sulvetta and Holahan (1984): The Medicare/Medicaid Automated Certification System (MMACS) data base was created primarily as a means to automate the process of tracking deficiencies in facilities participating in Medicare and Medicaid. An additional MMACS file containing data on patient characteristics was used in the following analysis. This file contains data from 1,373 freestanding and 211 hospital-based SNFs in 30 states (Table 43).

Table 44 presents the percentages of patients in hospital-based and freestanding SNFs with personal care requirements and services received. These data indicate a distinct pattern of sicker patients in hospital-based SNFs who require both greater amounts and higher levels of personal and skilled nursing care. Higher proportions of hospital-based (9 percent) than freestanding (4 percent) patients are completely bedfast. Similarly, a higher proportion of freestanding patients require no assistance with ambulation. Higher proportions of hospital-based patients require either

Table 43

Number of Facilities Reporting Patient Characteristics Data on the MMACS File by State and Facility Type: FY 1980

	Free-Standing	Hospital-Based
Alabama	107	20
Arizona	9	0
California	435	30
Colorado	19	4
Connecticut	77	3
Delaware	8	0
District of Columbia	1	0
Florida	139	8
Georgia	18	10
Hawaii	6	11
Kentucky	53	10
Maryland	29	4
Massachusetts	30	0
Mississippi	1	1
Montana	17	27
Nevada	10	2
New Hampshire	7	6
North Carolina	90	16
North Dakota	18	8
Pennsylvania	162	18
Rhode Island	5	0
South Carolina	47	9
South Dakota	3	2
Tennessee	37	7
Texas	1	0
Utah	14	2
Vermont	1	3
Virginia	19	5
West Virginia	9	5
Total	1,373	211

Source: Urban Institute Medicare SNF Cost Study, 1983.

Table 44

Proportion of Total Patients by
Patient Characteristics and Facility Type: FY 1980

	Unweighted Means	
	Freestanding	Hospital-Based
Completely Bedfast Patients	.043**	.087
Patients Requiring No Assistance With Ambulation	.162**	.138
Patients Requiring Assistance With Ambulation	.514	.543
Patients Requiring Full Assistance in Eating	.231*	.258
Patients Requiring Some Assistance in Eating	.257**	.309
Patients With Indwelling Catheters	.148**	.209
Incontinent Patients	.463*	.431
Patients With Decubiti	.082	.094
Patients With Bowel/Bladder Retraining	.081**	.145
Patients Receiving Special Skin Care	.331**	.396
Confused or Disoriented Patients	.556**	.495
Patients Receiving IV or Blood Transfusions	.003**	.014
Bed to Chair Patients	.374	.356

*Statistically significant at the .05 level.

**Statistically significant at the .01 level.

Source: Urban Institute Medicare SNF Cost Study, 1983.

full or some assistance in eating. Freestanding facilities have higher proportions (56 percent) than hospital-based facilities (50 percent) of patients who are confused or disoriented.

Table 44 also indicates that hospital-based SNFs (40 percent) have higher proportions than freestanding (33 percent) of patients who require special skin care. Special skin care entails turning patients regularly, heat and light treatment, and special skin cleansing treatments. Since patients requiring this care are at extremely high risk of acquiring a decubitus ulcer or other skin breakthrough, the application of special skin treatments normally requires high levels of skilled nursing care or supervision. While 46 percent of freestanding patients are incontinent compared to 43 percent of hospital-based patients, the hospital-based SNFs have more incontinent patients who have severe continence problems, as indicated by the higher prevalence of indwelling catheters (21 percent) in comparison to freestanding SNFs (15 percent). The irrigation of such catheters to keep the lines open also generally requires higher levels of nursing skills. Similarly, procedures involved in bowel and bladder retraining (e.g., the measurement of fluid intake and output) entails high levels of skills. The higher proportion of hospital-based patients (15 percent) requiring this treatment compared to those in freestanding facilities (8 percent) further indicates a more intense casemix in hospital-based facilities.

Table 45 presents the casemix of hospital-based and freestanding patients when the facilities are grouped by the proportion of Medicare days to total patient days. The general pattern of more severe casemix in hospital-based SNFs in this table reflects the pattern in Table 44 although the pattern of significant differences is not consistent across percent Medicare groups. For example, hospital-based SNFs have a higher prevalence of patients with intravenous care in facilities with more than 35

Table 45

Percent of Total Patients by Patient Characteristics and Facility Type Classified by Percent Medicare Days: FY 1980

	Less Than 10% Medicare Days		10% to 34.99% Medicare Days		35% to 64.99% Medicare Days		65% or More Medicare Days	
	Free-Standing	Hospital-Based	Free-Standing	Hospital-Based	Free-Standing	Hospital-Based	Free-Standing	Hospital-Based
	Unweighted Percentages							
Completely Bedfast Patients	.036**	.070	.060**	.118	.053*	.124	.054	.085
Patients Requiring No Assistance With Ambulation	.169	.174	.146**	.105	.157**	.088	.149	.078
Patients Requiring Assistance With Ambulation	.507*	.561	.512	.458	.575	.531	.549	.609
Patients Requiring Full Assistance in Eating	.225	.237	.254**	.330	.226	.296	.213	.213
Patients Requiring Some Assistance in Eating	.255**	.317	.258	.276	.248	.291	.302	.332
Patients with Indwelling Catheters	.122	.149	.202**	.293	.209*	.309	.215	.266
Incontinent Patients	.466	.443	.464	.477	.447	.421	.425*	.322
Patients With Decubiti	.069	.061	.112**	.157	.112	.139	.111	.113
Patients With Bowel/Bladder Retraining	.078**	.168	.089	.091	.093	.111	.066*	.153
Patients Receiving Special Skin Care	.321	.356	.347	.420	.372	.493	.336	.472
Confused or Disoriented Patients	.553**	.493	.568	.541	.558	.506	.513	.431
Patients Receiving IV or Blood Transfusions	.003	.003	.005	.023	.004*	.046	.003**	.029
Bed to Chair Patients	.376**	.298	.379**	.493	.325	.361	.390	.378
N	937	120	311	45	88	16	32	30

*Statistically significant at the .05 level.
**Statistically significant at the .01 level.

Source: Urban Institute Medicare SNF Cost Study, 1983.

percent Medicare days but not in ones with less then 35 percent Medicare days. Table 45 also shows that the severity of casemix of either hospital-based or freestanding facilities increases with proportion of Medicare days.

Relating facility costs to facility casemix and staffing with data from MMACS and cost reports, Sulvetta and Holahan found that less than half (43 percent) of the cost differences between hospital-based and freestanding SNFs were attributable to casemix and staffing differences. They concluded that the remaining difference in observed costs between these two types of facilities would be accounted for by unmeasured quality or casemix or to inefficiency.

4. Urban Institute (1983): This study examined the differences in casemix between hospital-based and freestanding nursing homes in New York and West Virginia. The data sources for this analysis were the annual cost reports for all patients in Medicaid certified nursing homes in the two States. As such, the results may not be directly applicable to an assessment of Medicare casemix differences.

New York requires nursing homes that participate in Medicaid to provide data on various activities of daily living (ADL) measures for all their patients as part of their annual cost report. The analysis of casemix differences in New York involved a comparison of percent of patients in the two types of facilities by six ADL measures: 1) eating, 2) transferring, 3) toileting, 4) dressing, 5) bathing, and 6) walking. The results of the comparison between hospital-based and freestanding homes in New York are presented in Table 46. Patients in hospital-based facilities in New York are more impaired than those in freestanding homes. The percentage needing help in five of the six ADL functions was statistically significantly greater in hospital-based homes. The difference for significant ADLs was on the order of ten percentage points.

Table 46

Average Percentage of Patients in New York SNFs With Limitations in Activities of Daily Living: FY 1980

	Hospital-Based (N = 11) % of Patients	Freestanding (N = 62) % of Patients
Needs Help - Eating/Feeding	71.2**	61.5
Needs Help - Transferring	79.5**	68.4
Needs Help - Toileting	81.2**	71.9
Needs Help - Dressing	88.1*	83.7
Needs Help - Bathing	92.4	93.7
Needs Help - Walking	84.7**	74.0

**Statistically significant at the .01 level.

*Statistically significant at the .05 level.

Source: Urban Institute Medicare SNF Cost Study, 1983.

West Virginia also requires nursing homes to provide data on the impairment of patients in their facilities. West Virginia uses the data directly in the rate setting process, setting ceilings which vary by the casemix of the facility. The categories are similar to those in New York, but not completely comparable, so cross-state comparisons should not be made. Table 47 shows that the hospital-based facilities had slightly higher percentages of persons needing assistance with ADLs than did freestanding facilities. The differences in each case were not statistically significant. For two categories, tube feeding and indwelling catheters, freestanding facilities had more impaired patients than hospital-based facilities. The absence of significant differences reflects in part the small sample sizes. In addition, hospital-based SNFs in rural areas are likely to be similar to their freestanding counterparts in terms of the patients they treat. Insufficient demand for more intensive care, for example, may preclude rural hospital-based facilities from developing the nursing or rehabilitation capacity to care for some of the more severely ill patients seen in urban hospital-based SNFs.

5. Cameron and Knauf (1982): This study employed a statistical methodology similar to the one used to develop DRGs to cluster patients in California nursing homes according to resource use. The sample of 1,151 patients in the study was selected from 23 facilities, five of which were hospital-based.

The study derived a casemix index for facilities that was expressed in terms of an average expected cost per diem for the facility. The average expected cost reflects the sum of the patient groups weighted by the standard resource costs of each casemix group. In comparing the 23 facilities in the sample, the researchers found that the casemix index for the hospital-based facilities exceeded the average casemix adjusted costs of all 23 facilities. The casemix index indicated that the

Table 47

Average Percentage of Patients in West Virginia SNFs With Limitations in Activities of Daily Living: FY 1980

	Hospital-Based (N = 11) % of Patients	Freestanding (N = 62) % of Patients
Needs Help - Eating	22.0	21.5
Needs Help - Transferring	78.5	73.7
Needs Help - Toileting	56.2	65.3
Needs Help - Bathing/Dressing	80.0	79.2
Completely Dependent - Mobility	39.7	31.5
Requires Tube Feeding	.5	1.6
Requires Treatment of Decubitus Ulcers	9.9	6.9
Requires Indwelling Catheters	8.6	11.4

Source: Urban Institute Medicare SNF Cost Study, 1983.

county operated hospital-based facilities tended to have the most severely ill patients, followed by the nonprofit hospital-based facilities (Table 48, column 6). The casemix indices for the county hospital-based facilities (1.22, 1.99, and 2.30), for example, imply that such facilities had patients that were 22 to 130 percent more costly than the average casemix across the 23 facilities. In contrast, most of the freestanding facilities, regardless of ownership status, had a casemix index of less than or just over one, indicating that their casemix severity was less than or the same as the average.

6. Shaughnessy, et al., (1982): This study focused on the casemix and quality differences between hospital-based and freestanding nursing homes in Colorado and the extent to which such differences explained the cost differential between the two facility types. Cost data were obtained from Medicaid cost reports, and various other secondary sources provided general casemix, quality, and facility characteristics. The most important results were obtained from an analysis of primary data collected on patients in 78 nursing homes, 65 of which were freestanding and 13 of which were hospital-based facilities. The percentage of Medicare patients in the sample facilities (0.38 percent) was extremely small.

The study found significant differences in casemix between hospital-based and freestanding nursing homes. Patients in hospital-based facilities tended to be significantly more dependent in several activities of daily living than patients in freestanding facilities (Table 49). Moreover, the distribution of a number of long term care problems, which include disabilities and services required, differed significantly between hospital-based and freestanding facilities. Twenty-seven long term care problems (which comprised services needs associated with specific conditions and disabilities) were analyzed, with significant differences emerging in

TABLE 48: SAMPLE FACILITIES PATIENT-MIX REPORT

TOTAL ROOM & BOARD AND ANCILLARY DIRECT COSTS

	NUMBER OF PATIENTS	AVE PATIENT COST	AVE EXPECTED COST	AVE COST INDEX	PERFORM -ANCE INDEX	CASE -MIX INDEX
HOSPITAL-BASED, COUNTY	LESS THAN 40	2,448	1,145	2.617	2.137	1.224
HOSPITAL-BASED, COUNTY	LESS THAN 40	2,702	1,866	2.888	1.447	1.995
SNF, COUNTY	MORE THAN 80	1,287	1,189	1.376	1.082	1.271
SNF, INVESTOR	40 TO 80	908	941	.971	.965	1.006
HOSPITAL-BASED, NON-PROFIT	40 TO 80	1,539	1,083	1.645	1.421	1.158
SNF, INVESTOR	LESS THAN 40	767	888	.820	.863	.950
SNF, NON-PROFIT	MORE THAN 80	1,139	839	1.218	1.357	.897
SNF, INVESTOR	MORE THAN 80	704	919	.753	.765	.983
SNF, INVESTOR	40 TO 80	617	942	.660	.654	1.008
SNF, INVESTOR	40 TO 80	801	907	.856	.882	.970
SNF, INVESTOR	40 TO 80	806	943	.861	.854	1.008
SNF, INVESTOR	40 TO 80	751	789	.803	.953	.843
SNF, NON-PROFIT	LESS THAN 40	905	835	.967	1.083	.893
ICF, INVESTOR	40 TO 80	521	579	.557	.900	.619
ICF, INVESTOR	40 TO 80	427	661	.457	.646	.707
SNF, INVESTOR	40 TO 80	726	1,014	.776	.716	1.084
SNF, INVESTOR	LESS THAN 40	780	972	.834	.802	1.039
ICF, INVESTOR	40 TO 80	524	553	.560	.947	.591
SNF, NON-PROFIT	LESS THAN 40	931	850	.995	1.095	.909
SNF, INVESTOR	40 TO 80	788	1,042	.843	.757	1.114
SNF, INVESTOR	40 TO 80	587	888	.627	.661	.949
HOSPITAL-BASED, NON-PROFIT	LESS THAN 40	2,047	1,136	2.189	1.802	1.214
HOSPITAL-BASED, COUNTY	LESS THAN 40	2,899	2,152	3.099	1.347	2.300
TOTAL FOR 23 FACILITIES	1,151	935	935	1.000	1.000	1.000

Source: Cameron and Knauf, 1982.

TABLE 19 : Comparisons of ADL's for 1596 Patients in 65 Free-Standing and 247 Patients in 13 Hospital-Based Nursing Homes, 1980.

Activities of Daily Living (ADL's)[a]	Means and Standard Deviations by Facility Type: Free-Standing Mean	Free-Standing St. Dev.	Hospital-Based Mean	Hospital-Based St. Dev.	Significance[b]
Bathing (*)	.589	.492	.648	.479	.080
Eating	.188	.391	.245	.425	.086
Toileting (*)	.491	.500	.547	.499	.105
Bed Mobility	.298	.458	.362	.481	.044
Katz Grade Index(*)	3.482	2.361	3.704	2.324	.032[c]
Katz Score Index(*)	2.525	2.298	2.745	2.280	.015[c]

[a]An asterisk (*) next to a variable indicates it was also significant ($p<.10$) when the analysis was restricted to the hospital-based group compared with the matched free-standing group.

[b]Exact p-value for the chi-square test for the difference between two proportions, unless indicated otherwise.

[c]Exact p-value for the chi-square test for association.

Source: Shaughnessy, et al., 1982.

11 of the problems. Freestanding facilities tended to have higher proportions of patients with psychosocial and communicative problems, while hospital-based nursing homes tended to have more patients with medically-oriented problems (Table 50). The medical severity of non-psychosocial problems tended to be greater for hospital-based nursing home patients.

Approximately 41 percent of the $11 per day cost difference between hospital-based and freestanding facilities can be accounted for by differences in casemix and quality. Similarly, 42 percent of the differential in nursing and aide costs between the two types of facilities could be explained in terms of casemix and quality differences.

D. Summary and Conclusions

This chapter focused on casemix differences between hospital-based and freestanding SNFs, in response to the Congressional mandate to determine if hospital-based SNFs have a different casemix than freestanding facilities. In addition, the data derived on casemix in SNFs provides new information for use in a casemix adjustment for a Medicare prospective payment system.

Differences in patient casemix appear to be one reason why hospital-based SNFs are more costly on average than freestanding SNFs. Other possible explanations for the cost difference include differences in quality of care and efficiency of operation. In addition, for Medicare reimbursement purposes, certain overhead or indirect expenses, such as administrative salaries, must be allocated between a hospital's acute care unit and subproviders such as the skilled nursing unit. Approximately 8 percent of total routine cost differences between hospital-based and freestanding SNFs has been determined to be due to overhead allocation in hospital-based facilities.

TABLE 50: Comparisons of Long-Term Care Problems for 1596 Patients in 65 Free-Standing and 247 Patients in 13 Hospital-Based Nursing Homes, 1980.

	Means and Standard Deviations by Facility Type				
	Free-Standing		Hospital-Based		Signifi-
Long-Term Care Problems[a]	Mean	St. Dev.	Mean	St. Dev.	cance[b]
Uncomplicated Skin Condition(*)	.092	.289	.061	.239	.105
Dehydration(*)	.061	.240	.032	.177	.068
Constipation(*)	.261	.439	.417	.494	<.001
Bowel Incontinence	.189	.392	.142	.349	.088
Dentition Impairment(*)	.312	.464	.220	.415	.003
Shortness of Breath(*)	.069	.253	.040	.197	.091
Urinary Tract Infection	.021	.143	.049	.216	.008
Diabetes Mellitus(*)	.073	.261	.126	.333	.004
Depression/Apathy (*)	.171	.376	.092	.290	.002
Psychotic/Drug-Alcohol Dependency(*)	.066	.249	.033	.180	.049
Mental Retardation/Developmental Disability (*)	.048	.215	.012	.110	.010

[a]An asterisk (*) next to a variable indicates it was also significant ($p<.10$) when the analysis was restricted to the hospital-based group compared with the matched free-standing group.

[b]Exact p-value for the chi-square test for the difference between two proportions.

Source: Shaughnessy, et al., 1982.

A difference in casemix between hospital-based and freestanding SNFs is indicated by Medicare utilization and staffing data as well as the results of most outside studies. The Medicare data indicated that hospital-based SNFs had on average higher proportions of Medicare patient days to total days and higher admissions per bed. Both of these results suggest higher utilization by short-term rehabilitation patients who are likely to be more costly to care for than traditional long term care patients.

On average, hospital-based facilities had 19 percent higher nursing hours than freestanding facilities. Hospital-based SNFs also provide more rehabilitation services than freestanding facilities. While these results suggest that hospital-based facilities are staffed to serve a more severe casemix, these data are insufficient to precisely isolate casemix effects from inefficiency and quality of care differences.

Results from the six outside studies also support the existence of casemix differences between hospital-based and freestanding SNFs. Three of the studies examined casemix differences among general nursing home patients in hospital-based and freestanding facilities. Cameron (1982) found that hospital-based facilities in California had distinctly more severe casemixes as reflected by costs associated with their treatment. Shaughnessy et al. (1982) found that 41 percent of the higher nursing and total costs of hospital-based facilities in Colorado was attributable to casemix. The Urban Institute found higher proportions of hospital-based patients with ADL problems in New York, although no statistically significant differences were found in West Virginia. Sulvetta and Holahan's analysis of MMACS data on 1,500 Medicare SNFs in 30 States indicated an overall pattern of greater severity of hospital-based SNF patients, as measured by disability and specialized nursing services required. When stratified by percent Medicare days, differences in

casemix between hospital-based and freestanding SNFs were less distinct, indicating that the higher proportion of Medicare patient days in hospital-based SNFs accounts partially for the general casemix difference between hospital-based and freestanding facilities.

The two studies that focused on high Medicare utilization facilities (Shaughnessy, 1983 and Mor and Sherwood, 1983) also found differences in casemix between hospital-based and freestanding facilities. Mor and Sherwood found differences in casemix between hospital-based and freestanding facilities in Massachusetts but less in Oregon. In the case of both Massachusetts and Oregon, however, hospital-based facilities treated significantly higher proportions of patients who were admitted for rehabilitative purposes. In addition to the rehabilitation orientation of hospital-based patients, Shaughnessy also found that higher proportions of hospital-based patients were medically more severe and had greater functional dependencies. Of equal importance, this study also found that Medicare and non-Medicare patients in the same facilities were different in terms of their medical condition and care requirements.

Research findings presented in this chapter support the notion that the higher costs of hospital-based facilities are attributable in part to a heavier casemix. The greater casemix severity of hospital-based patients in the studies on the general nursing home population is not surprising in light of the higher proportion of Medicare patients to total patients in these facilities. Since the regression analyses showed that higher proportions of Medicare patients in SNFs increase average per diem costs, the higher proportion of Medicare patients generally found in hospital-based facilities is one factor that relates casemix to higher costs in hospital-based facilities.

The second casemix factor contributing to higher costs in hospital-based facilities is the more intensive medical problems (e.g., post surgical rehabilitation) treated by these facilities. Further, while the greater rehabilitation orientation of hospital-based patients will be reflected in the ancillary costs for therapy, it is also reflected in higher levels of nurse staffing under routine operating costs. The capacity of hospital-based SNFs to provide extensive rehabilitation services is particularly clear in urban settings in comparison to rural settings. In urban areas, where there is sufficient demand for extensive rehabilitative care, many hospital-based facilities can efficiently make available these staff resources. On the other hand, in many rural areas there are only small numbers of patients needing rehabilitation, making it prohibitive for hospital-based facilities to provide necessary staffing. Therefore, in rural areas, hospital-based facilities are more similar in staffing to freestanding facilities.

In conclusion, the results of the outside studies and analysis of HCFA data describe a pattern of higher routine costs among hospital-based facilities which are due in part to nursing costs and to an association between the higher costs and greater nursing and rehabilitation service capacity of hospital-based facilities, particularly in urban setttings. Evidence from the studies that the hospital-based facilities tend to treat patients with greater severity of illness than do the freestanding facilities suggests that the higher costs associated with the hospital-based facilities are justified in part by the care needs of their patients. These studies suggest that casemix differences may account for up to 50 percent of the cost differences between hospital-based and freestanding SNFs. Thus, in examining options for payment reform of the Medicare SNF benefit, care must be taken to distinguish cost differences between hospital-based and freestanding SNFs that are due to casemix from others associated with provider efficiency.

CONCLUSIONS.

The Department conducted a thorough analysis of internal administrative data, reviewed existing literature and commissioned outside studies to provide the most complete picture currently available on the Medicare SNF industry. Results of this research, which were presented in this report, provide a detailed analysis of the Medicare SNF benefit, the structure of the industry, Medicare SNF casemix and cost relationships, differences between hospital-based and freestanding SNFs, and reimbursement issues involved in the Medicare SNF benefit.

Our analysis of available information indicates that important issues need to be considered before specific options for reimbursement reform of the Medicare SNF benefit can be addressed.

(1) A key issue is that no reliable and valid patient-specific casemix measure presently exists for Medicare SNF patients. We do not have a well tested measure like the Diagnosis Related Groups (DRGs) which provided the key to the development of Medicare's prospective payment system for hospitals. While the research results presented in this report have described the state of knowledge on the relationships between casemix and resource consumption of Medicare SNF patients, it is clear that further work is required. The Department is sponsoring additional research in this area, including analyses of the relationship between hospital DRGs and SNF costs, identification of SNF resource utilization groups and development of Medicare patient-specific casemix indices.

(2) A second major issue is the effect of hospital prospective payment on SNFs and other postacute benefits under Medicare. Since hospital payment is on a per case

rather than the previous per diem basis, hospitals will have incentives to keep patients in an acute care setting only as long as it is medically necessary. Thus, some observers predict that hospitals will discharge more patients to Medicare SNFs and other postacute units, such as rehabilitation hospitals and "swing beds". Under Medicare, rehabilitation hospitals and rehabilitation units of general hospitals are providers that must be engaged primarily in rehabilitation as defined, in part, by 75 percent of their patients being treated for conditions that typically require inpatient rehabilitation. The swing bed option under Medicare allows small hospitals (under 50 beds), operating in rural areas where there is a scarcity of long-term care beds, to use their beds for either acute or long-term care services. The expected increase in demand for postacute care implies that specific options for prospective payment need to provide incentives to allow SNFs to manage heavier Medicare caseloads and also to promote the most efficient use of SNFs in relation to other postacute benefits under Medicare. The importance of addressing these issues is indicated, first, by the fact that nursing home bed expansion is currently being restricted by states' certificate of need policies, and second, by the possibility that SNFs and other postacute care benefits—which are currently subject to different reimbursement rules under Medicare—may, in some cases, serve similar types of patients. For example, average lengths of stay in some of these units, like that of SNFs (29 days), are relatively short. Both rehabilitation units and rehabilitation hospitals average 22 days per stay, while swing bed stays average 13 days. On the other hand, while SNFs are currently reimbursed at cost up to limits based on the average costs of participating facilities, rehabilitation hospital and units are reimbursed at cost up to limits based on each facility's base-year costs adjusted for inflation. Equally dissimilar are the reimbursement rules for swing beds used for long-term care; when its swing beds are used for long-term care patients, a hospital is reimbursed for routine costs at a per diem rate equal to its state's average Medicaid SNF rate.

(3) Finally, the quality of care for Medicare beneficiaries needs to be ensured under any SNF prospective payment system. The Department is engaged in research and operational initiatives that are intended to improve our ability to examine patient outcomes to assure quality of care. Changes in the survey and certification requirements and procedures are also being studied to determine if problem facilities can be more readily identified so that corrective actions can be more effective.

Results from our current research and operational initiatives should provide additional information to address many of the unanswered questions. This additional information will be incorporated in our analysis of specific SNF payment reform proposals which, as required by the 1984 Deficit Reduction Act, will be forwarded to the Congress in a separate report.

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APPENDIX I

ELIMINATION OF THE THREE-DAY PRIOR HOSPITAL STAY REQUIREMENT FOR SNF SERVICES

Except as discussed below, under current law a patient insured by Medicare is eligible for SNF benefits only if he or she has had a hospital stay of three or more consecutive days prior to admission to the SNF. This requirement is intended to ensure that the SNF benefit is used as a lower cost substitute for continued hospital care for an acute illness. In recent years, however, proponents of eliminating the requirement have argued that it may actually increase hospital use, which occurs merely to establish eligibility for coverage of SNF care.

Section 123 of the Tax Equity and Fiscal Responsibility Act of 1982, P.L. 97-248, authorized Medicare SNF coverage without the three-day prior hospitalization requirement. However, this provision also explicitly states that the Secretary of Health and Human Services shall provide such coverage only under such terms and conditions that will not result in any increase in Medicare payments and will not alter the acute care nature of the SNF benefit. Since implementing this provision involves covering patients who are not now eligible, it is impossible to eliminate the three-day prior hospitalization requirement without increasing SNF expenditures unless there are some hospital (and associated ancillary and physician) savings.

There are two studies that address the issue of the effect of eliminating the three-day prior hospitalization requirement. The first is the Abt Associates, Inc. (1981) evaluation of a two year demonstration project in Massachusetts and Oregon where the three-day prior hospitalization requirement was waived. The demonstration

was principally designed to examine the quality of care rather than costs when the three-day requirement was waived. As a minor addition, the evaluation included some estimates of the cost/savings to the Medicare program if the three-day requirement were waived nationwide.

The evaluation concluded that there would be a cost due to increased SNF utilization and a roughly equal offsetting savings due to decreased hospital utilization. However, these estimates were not based on a controlled experiment and the results may not be valid. Nursing home administrators were asked which patients would have gone to the hospital in order to satisfy the prior hospitalization requirement. There were no actual data collected on decreased hospital utilization other than the opinions (possibly biased) of these nursing home directors. Moreover, it is important to note that many of the Medicare SNF patients in the Abt study for whom the three-day stay requirement was waived were already in the nursing home at the time of Medicare "admission" (69 percent in Massachusetts, 46 percent in Oregon). In other words, the waiver of the three-day prior hospital stay requirement for Medicare SNF services did not increase access to nursing home care for these patients; it merely changed their source of payment for nursing home care (from Medicaid or private pay to Medicare). In many instances, this resulted in the nursing home receiving a higher rate for a patient previously served at a lower Medicaid rate. Whether the level or intensity of services the individual received also increased is not known.

More recently, HCFA's Bureau of Data Management and Strategy completed a study of hospital lengths of stay of Medicare SNF patients (Klees and Mussey, 1983). If patients were admitted to hospitals solely for the purpose of gaining eligibility for Medicare SNF care, then such a study would be expected to show a

significant number of SNF patients with only three days of hospitalization. The analysis, which was based on a 100 percent census of Medicare SNF admissions for 1979 and a 20 percent sample of all Medicare hospital stays in 1979, found that only 1.8 percent of SNF admissions had only the minimum three-day-prior hospital stay; four percent of SNF admissions had a prior hospital stay of four days or less (cumulative percentage). In contrast, 29.2 percent of all Medicare hospital stays generally were four days or less. The average prior hospital stay for covered SNF admissions in 1979 was 22.7 days while the average length of a Medicare hospital stay generally was 10.5 days. The findings from this analysis strongly support the view that the Medicare SNF benefit is being used as Congress originally intended it to be used, that is, as a lower cost alternative to prolonged hospitalization for persons whose conditions originally required hospitalization. The fact that less than two percent of Medicare SNF admissions had a prior hospital stay of only three days also strongly suggests that there are very few Medicare SNF patients who enter the hospital solely in order to qualify for Medicare SNF services. Thus, it is likely that the cost savings from eliminating the three-day hospitalization requirement would be very small, indeed considerably smaller than the cost of increased SNF care.

In addition, HCFA recently solicited recommendations from Medicare intermediaries and State Medicaid agencies on how to implement elimination of the three-day prior hospitalization requirement for Medicare SNF services within the constraints imposed by the statute (i.e., no change in the acute care nature of the benefit and no additional program costs). Although the commenters did suggest various diagnoses that might be handled via direct SNF admissions, there was little agreement among the commenters on the diagnoses suggested. Both the State agencies and the intermediaries indicated that substantial increases in medical

review would be needed to assure that direct admissions were appropriate. These anticipated increases in medical review would add considerably to the administrative costs of the Medicare SNF benefit.

In sum, there is little evidence that a significant number of Medicare beneficiaries are admitted to the hospital principally for the purpose of meeting the SNF three-day prior hospitalization requirement. Moreover, there appears to be little consensus on what type of patients should be exempted from the three-day hospital stay requirement. As a result, HCFA cannot at this time eliminate the hospital stay requirement and still meet the statutory requirements of no increased Medicare expenditures and maintenance of the acute care nature of the SNF benefit.

Appendix II (Table 51)

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984*

State	Effective Date of Change in Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Alabama	3/83	Individual facility, prospective rate.	Based on HIM-15.	Not specified.	Return on equity.
Alaska	10/83	Individual facility, prospective rate.	Based on State's principles.	Not specified.	Not specified.
Arkansas	4/84	For SNFs & ICFs, a prospective class rate based on arrayed aggregate facility costs. For ICFs/MR, indiv. facility retrospective rate.	Generally HIM-15. ROE not an allowable cost.	PT, other rehabilitative services & physician services reimbursed as part of rate.	Efficiency incentive equal to difference between adjusted per diem & class 80th percentile up to $2 PPD.
California	7/82	Prospective class rates based on arrayed aggregate facility costs.	Based on HIM-15.	Not specified.	Return on equity.
Colorado	4/83	Individual facility, prospective rate based on arrayed aggregate facility costs.	Based on State definitions and ceilings.	Not specified.	Efficiency incentive equal to 50% of difference between reasonable and actual cost up to 12% of reasonable cost (with periodic deletions of incentive factor).
Connecticut	7/83	Individual facility prospective rate which is a composite of 4 cost centers plus property costs & owner/administrators salaries.	Based on HIM-15. Property costs & equity allowance determined by Fair Rental Value; limits to owners compensation and other salaries.	Not specified.	Return on equity; efficiency incentive up to 20% of difference between ceiling costs less actual in 2 cost centers (differential must be at least $1000).

* This table is based on HCFA staff working papers which are periodically updated from State plans. Because they are frequently amended, the State plan should be consulted directly for the most complete and up-to-date information on State reimbursement practices.

Appendix II

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Alabama	Level of care (SNF, SNF/ICF, ICF, ICF-MR - 15 beds & under ICF/MD over 15 beds).	HCFA's marketbasket index. Salaries inflated by method which considers increase in minimum wage. Other costs inflated 7.5%.	60th percentile of arrayed costs per class (including adjustments).	Retrospective settlement based on cost report.	None specified.
Alaska	Combination	8% per year.	Not to exceed a rate based on Medicare principles.	Extraordinary circumstances.	None specified.
Arkansas	Level of care (SNF, ICF, ICF-MR, & the Benton Service Ctr).	Aggregate based on CPI. State reserves right to revise. (For 1981 for SNFs & ICFs, State used a 4.1% factor.)	SNFs & ICFs = the class rate is the 80th percentile facility. ICFs-MR = State reimburses reasonable costs of the cost centers. Rate freeze effective 7/1/83 for SNF & ICF through 12/31/83 Class rate is the median of adjusted costs.	Occupancy (fixed costs only).	Yes, Commissioner Arkansas Social Services.
California.	Level of care (SNF, ICF). Freestanding or distinct part fac. Number of beds. Location.	Cal. CPI, Producer Price Index, historical trends		300 + bed facilities & distinct part of acute care facilities limited to lower of class rates or costs.	None specified.
Colorado	Level of care (Class I - SNF & ICF, Class II - MR, Class III - MR Class IV - MR intense, Class V - skilled & rehab.).	½ annual CPI times actual cost except interest, or class ceiling plus percent increase in minimum wage (less amount included in CPI).	90th percentile of arrayed costs per class, except for health care and raw food at 100%.	Rate calculated every 6 mo. based on semi-annual cost reports, reduction of rate for late cost reports.	Yes. Formal appeals process.
Connecticut	Level of care (SNF, ICF, Homes for the Aged).	Salaries = 10 yr. moving average of State's personal income & wages index; other costs = GNP deflator.	155% of group median operating costs, property & compensation limits.	Economic index adjusted for errors ±5% occupancy.	Yes, State Committee on Payments.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Delaware	2/84	Individual facility prospective rates based on arrayed aggregate facility costs.	Based on HIM-15 and other other applicable HCFA regulations.	Fee for service.	None.
District of Columbia	12/76	Individual facility prospective rate composite of cost center for general & admin. costs plus reasonable costs for other exp. areas.	Based on D.C.'s principles of reimbursement. If not specified, HIM is used.	Cost of PT and rehab., except for OT, included in rate calculation.	None specified.
Florida	1/84	Individual facility prospective rates based on arrayed aggregate, facility costs.	Based on HIM-15 subject to various limitations imposed by State (e.g., owners' comp., leases, depreciation).	PT, audiology, speech pathology, & OT reimbursed as part of rate.	Return on equity. Incentive 1/3 - 2/3 difference between operating costs and class ceiling depending on license.
Georgia	4/84	Individual facility prospective rate which is composite of 5 cost center rates plus property taxes & property insurance.	Generally HIM-15. Depreciation, leases, interest, & related party costs determined in accordance with HIM-15.	Not specified.	Return on equity (11%). Efficiency incentives available in each cost center up to maximum per cost center & $1.49 maximum per facility. PPD.
Hawaii	9/83	Individual facility retrospective rate based on Medicare principles of reimbursement.	Based on HIM-15.	Fee for service.	Return on equity.
Idaho	1/82	Individual facility retrospective rate based on Medicare principles of reimbursement.	Based on HIM-15. Owners' compensation subject to reasonableness ranges.	Fee for service.	Efficiency incentive for cost categories less than percentile cap.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Delaware	Ownership (State operated and all other).	Index estimate by University of Delaware.	75th percentile of arrayed costs per class. Freeze on capital costs 2/84.	None specified.	Yes. Review agent not specified.
District of Columbia	None specified.	Based on 57% of CPI.	Maximum allowable cost for general adm. will not exceed 15% of total allowable cost for fac. Nsg. staff allowance limit based on minimum staffing level plus 20%. Controls on individual cost centers.	Occupancy, new facilities.	Yes. Office of State Agency Affairs.
Florida	North and South number of beds.	Formula based on DRI.	Formula based on class median.	Extraordinary circumstances, new providers, occupancy.	Yes, Health & Rehabilitative Serv.
Georgia	Classes vary by cost center. Criteria include level of care, # of beds, hospital vs. freestanding, age of facility.	A composite index, statewide average weights for salary & non-salary costs; rate of increase & weights based on analysis of cost. 22.5% for operating costs.	By cost center. Routine & special services, dietary, laundry, housekeeping, administration equal 75th percentile; Property = 90th; Taxes & insur 100th.	Occupancy (property costs only), new facilities.	Yes, Dept. Medical Asst. under procedures outlined in State nursing home manual.
Hawaii	None.	None, but the payment methodology is Medicare which considers estimated costs.	Not to exceed a rate based on Medicare principles.	Retrospective settlement based on final cost repts.	None specified.
Idaho	None.	Nine cost center indices for determining cost limits.	Not to exceed a rate based on Medicare principles.	Occupancy (fixed costs only), reduction of rate for late cost repts.	Yes. Dept. of Health & Welfare.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Illinois	7/83	Except for capital, individual facility prospective rate is composite of 4 cost centers. For capital, prospective class rate. Nursing rates are based on patient assessment. State facilities use cost based system.	Depreciation, interest & related party costs based on HIM-15. Otherwise not specified.	Not specified.	Efficiency incentives in support cost component (basically 50% of difference between costs & cost center ceiling).
Indiana	4/83	Individual facility prospective rate based on arrayed aggregate facility costs.	Generally HIM-15. A per bed limitation is established for depreciation. State limits on nursing homes, owners' compensation and interest.	Fee for service.	Efficiency incentive equal to 30% of difference between class ceiling minus actual cost.
Iowa	11/83	For all ICFs, individual facility prospective rate based on arrayed aggregate facility cost. For SNFs, rate based on Medicare principles.	ICFs & ICFs-MR based on State principles set forth in plan. SNF - based on HIM-15.	ICFs & ICFs-MR therapy services reimbursed as part of rate. SNFs - fee for service.	For non-state ICFs only, 50% of difference between 60th and 74th percentiles of cost.
Kansas	10/81	Individual facility prospective rate which is composite of 4 cost centers.	Based on State principles.	Payment for ancillary services in accordance with State rules.	Inversely higher allowance not to exceed $.50 PPD for lower administration and & plant oper. costs.
Kentucky	7/83	For SNFs & ICFs, individual facility prospective rate based on arrayed aggregate facility costs.	Generally HIM-15 as modified by State principles (e.g., owners' compensation).	Reimbursed separately. 100% of actual reasonable cost to providers.	Investment factor and incentive allowance inversely structured to provide greater returns to facilities with lower costs. Not to public facilities. Non-profits received only incentive.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Illinois	Classes vary by cost center. Criteria include HSA & level of care for support costs, level of care for nursing & age, HSA & level of care for capital.	Composite index per cost center (except for capital); statewide average weights; adjustments for minimum wage increases if necessary.	Vary by cost center. Generally at 60th percentile or median plus percent as for certain types of facilities. (i.e., ICF/MR/SLC, SNF - Ped and ICF MR/ 15 or less beds) Rate frozen thru 7/1/84.	Occupancy, economic index adjusted for errors ± 5 percentage points.	None specified.
Indiana	Level of care (SNF, ICF); Geographic (North, Central, South); ICFs-MR separate.	CPI.	140.9% of mean cost for class; individual facility rates may not exceed 109% of previously approved rate. ICFs-MR approx. 65% of SNF allowable cost.	Occupancy, providers may receive 2 rate increases/ year not to exceed 9% of previously approved rate.	Yes. State Dept. of Public Welfare.
Iowa	Level of care (SNF, ICF, ICF-MR). Ownership - State owned and non-State owned.	Composite index, statewide weights based on State indices, not to exceed 5% semi-annually. ICF rate increased by 6%.	Up to 8 facilities in class = 100% of cost; 8 or more facilities in a class = 74th percentile of arrayed costs. ICF rate frozen 11/83 SNF rate reduction 6.79% 11/83.	New providers, reserved bed days covered.	None specified.
Kansas	Level of care (SNF, ICF, ICF-MR). Ownership - State and non-State owned.	Aggregate indices based on historical CPI and est. CPI.	4 cost center ceilings; Admin. - 75th; Property-85th; Room & Board - 90th; Health Care - 90th; Overall - 75th.	Reserved bed days covered, new providers, occupancy.	None specified.
Kentucky	Level of care (SNF, ICF, ICF-MR, Dual licensed pediatric facilities).	Aggregate index based on DRI.	105% of median cost for class. Separate upper limit for hospital based SNFs.	Reserved beds, occupancy.	Plan provides for appeals procedures.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Louisiana	8/83	For SNFs & ICFs, prospective class rates based on arrayed aggregate fac. costs. For ICFs-MR, individual fac. prospective rates based on facility budget.	Based on HIM-15.	Fee for service.	Return on equity. Proprietary ICFs-MR receive $2 PPD incentive not to exceed upper limit.
Maine	7/82	Individual facility retrospective rate based on arrayed aggregate facility rate for SNFs; For ICFs and ICFs/MR indiv. fac. prospective rates.	Based on HIM-15, subject to cost definitions & ceilings specified in plan.	Not specified.	Return on equity.
Maryland	1/83	Individual facility prospective rate for admin. and routine costs capital costs based on appraisals - nursing cost based on pt. assessments. ICFs-MR reimbursed under Medicare formula.	Based on HIM-15.	Not specified.	Return on equity, efficiency allowance for admin. & routine costs.
Massachusetts	2/84	SNF & ICF individual facility retrospective rate is composite of 3 cost centers. ICF-MR/15 beds or less indiv. fac. prospective rate. ICF-MR/10 beds or more - reimbursed under Medicare formula.	Based on HIM-15, subject to State tests of reasonableness. No increase of depreciation basis on sale of facility.	Fee for service.	Return on equity. 1.12 of avg. return. Health Insurance Trust Fund. Heavy care incentive.
Michigan	1/83	SNF & ICF individual facility prospective rate which is composite of 2 cost centers. ICF-MR reimbursed under Medicare formula.	Based on specified Medicare principles State principles. Not HIM-15.	Fee for service.	Plant & variable cost components - $.50 & $1 of difference between cost and component ceiling total up to $1. ROE may be selected n flow of plant cost incentive.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Louisiana	Level of care (SNF, ICF-I, ICF-II, ICF-MR).	Composite index, statewide weights, based on component indices of CPI; fixed costs not trended.	SNFs & ICFs class rate is 60th percentile fac.; ICFs-MR 90th percentile of arrayed costs. Rates for SNF/ICF frozen at FY 83 level.	New facilities.	None specified.
Maine	Level of care (SNF, ICF, ICF-MR).	None, but the payment methodology is retrospective. For ICFs & ICFs/MR, DRI market basket index.	Not to exceed a rate based on Medicare principles.	Occupancy, deficiency per diem, adjustments to interim rate based on actual cost experience.	Yes. Dept. of Human Services.
Maryland	Level of care bed size, location.	Ceiling rates adjusted for various specified components of CPI.	Admin. + routine 115% of the lowest aggregate indexed interim cost associated with at least 50% of Medicaid pt. days 120% for other pt. costs.	Occupancy, newly constructed facilities,	Yes. Dept. of Mental & Hygiene.
Massachusetts	SNF & ICF by cost center based on lev. of care, # of beds; ICF-MR by # of beds.	Composite index, statewide weights based on component indices of DRI area Wage Survey for Boston.	SNFs & ICFs - Nursing & operating costs - 1 standard deviation above mean, administration - published schedule. ICFs-MR - $16,500 administration ceiling.	Occupancy.	Yes, rate setting commission.
Michigan	4 classes; County & hosp.; Proprietary & non-prof.; ICFs-MR; SNF-MR.	Composite index, statewide weights based on US CPI & WPI by a proportion of nonpayroll costs & by wgting. chngs. in unit labor costs for payroll cost.	PCC - fair market value of newly constructed fac. (frozen 4 yrs. for existing fac.). VCC - 80th percentile. (80th also used for PCC incentive.)	Occupancy, new facilities, extraordinary circumstances.	Yes. Dept of Social Services.

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Minnesota	7/83	For SNF, ICF, & ICF/MR individual facility prospective rate which is composite of 2 cost centers. Capital freeze.	Generally HIM-15, but plan omits HIM reference. Interest expense allowable only to extent rate exceeds 9% but is more than 12%.	Reimbursed separately. Not defined as routine service costs. Methodology not specified.	Investment allowance in lieu of non-allowable interest expense and ROE. Efficiency allowance.
Mississippi	4/84	Individual facility prospective rate based on arrayed aggregate facility costs.	Generally HIM-15, subject to cost definitions & ceilings specified in plan.	Reimbursed separately. Not defined as routine service costs. Methodology not specified.	Return on equity. Efficiency incentive = to difference between ceiling costs less per diem costs up to $2.
Missouri	4/83	Individual facility prospective rate based on FY 81 rates as inflated by DRI.	Generally HIM-15. Interest income not offset against interest expense. Personal laundry $15 per mo.	Not specified.	Up to 5% of rate for pt. care, other direct care & raw food costs.
Montana	7/83	SNF & ICF individual facility prospective rate based on arrayed aggregate fac. costs. ICF-MR - individual facility retrospective rate.	Generally HIM-15. Return on equity not allowed. Owners' compensation definition is expanded.	Not specified.	Efficieny incentive - to difference between 90th percentile less per diem costs up to $1.50 PPD.
Nebraska	7/83	Pros. fac. by fac. rate subject to allowable and unallowable limits.	Generally HIM-15. Recapture of depreciation does not occur if facility owned 10 or more years.	Reimbursed separately. Methodology not specified.	Return on equity.

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State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Minnesota	Level of care (SNF, ICF); Location (urban/ rural); Ownership; ICF-MR separate.	Base year operating costs plus 6%.	Property frozen. 60th percentile of historical costs (plus 80% of dif. for 83 & 75% for 84 A&G ratio to operating costs.	Under 31 beds, may elect flat rate; occupancy (fixed costs only); new facilities; cost sharing provision if upper limit exceed; sunset clause.	Yes. Dept. of Public Welfare.
Mississippi	Level of care (SNF, Dual, ICF-MR, # of beds (1-60, 61-120, 120+) (dual only).	Composite index, statewide weights based on component indices of CPI.	60th percentile of arrayed costs per class (weighted by days). Limit on deprec.	Occupancy, new facilities.	Yes. Medicaid Commission.
Missouri	Level of care (SNF, ICF, Dual & ICF-MR).	Negotiated trend factor.	Dollar amt. specified class ceilings.	Occupancy 85%.	Yes. Dept. of Social Services.
Montana	Level of care (SNF, ICF, ICF-MR).	6% effective 7/1/84	SNF, ICF - 90th percentile of arrayed costs; ICF-MR nursing care limited to 90th percentile of arrayed SNF & ICF costs.	New facilities, occupancy (fixed costs only).	Yes. Dept. of Social & Rehab. Services.
Nebraska	SNF, ICF (SMSA) and all others), Hosp. based SNF & ICF; ICF-MR, ICF-MR (DD).	3.75% for FYs 82 and 83.	Less than 40 beds - 120% of class mean operating costs. More than 40 beds - 110% of class mean operating costs.	Occupancy.	Provided for in Public Welfare Manual.

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Nevada	7/84	Employee benefits, raw food, health care & property, indiv. facility retrospective rate based on arrayed aggregate facility costs. Admin. & housekeeping, uniform prospective class rate paid in each cost center.	Generally HIM-15 as modified by State's Medicaid manual.	Reimbursed separately. Methodology not specified.	Return on equity. 1½ times rate for III Trust Fund.
New Hampshire	10/83	SNFs, individual facility retrospective rate based on reasonable cost. ICF, indiv. facility prospective rate based on arrayed aggregate facility costs. ICF/MR - retrospective rate.	Based on HIM-15, except as modified in plan. Owners' comp. schedule. CAP on motor vehicle expense.	Physician services, lab, x-ray fee for service. Therapies include in ICF rate calculation.	ICFs only-efficiency incentive 25% of difference between ceiling cost and actual. Incentive must be at least $5000/year.
New Jersey	4/84	SNFs & ICFs individual fac. prospective rate which is composite of 5 cost centers. ICFs-MR reimbursed under Medicare formula.	Based on State prinset forth in plan.	Covered ancillary services are reimbursed separately.	Return on equity for proprietary providers receiving historical costs. Providers receiving screened costs receive working capital allowance.
New Mexico	4/84	Individual facility prospective rate based on arrayed aggregate facility costs.	Generally HIM-15. Maximum administrator compensation based on regression analysis.	Not specified.	Return on equity, efficiency incentive up to $2 PPD paid retrospectively.
New York	10/83	Individual facility prospective rate with group ceilings on certain cost centers.	Generally HIM-15. Capital cost reimbursement not affected by sale, lease, or transfer. Compensation limits. Reasonableness limits on various other costs.	Therapies and legend drugs included in rate calculation. Others at option of facility.	Return on equity (separate for land, building, non-moveable equipment, and for other equi

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LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Nevada	Freestanding, Hosp.-Based, ICF-MR.	Prospectively reimbursed costs trended based on CPI changes, and other relevant factors.	Prospectively reimbursed costs - 105% of weighted median cost of class. Other costs - employee benefits reasonable costs; raw food - 95th per. of arrayed costs for class; health care based on max. hrs. PPD level of care; property based on cost definitions.	None specified.	None specified.
New Hampshire	Level of care (SNF, ICF, ICF-Mental Disorder, ICF-MR), # of beds - ICF only (0-49 50-99, 100 and over).	ICF allowable controllable costs trended by CPI. SNF costs not inflated because system is retrospective.	ICF - 75th percentile of arrayed cost per class. SNF may not exceed a rate based on Medicare principles.	None specified.	Yes. Dept. of Health & Welfare.
New Jersey	SNF, ICF-I, ICF-II, ICF-MR.	Composite index based on BLS data for salaries (60%) & CPI (40%).	Prospective rate established at lower of unscreened historical costs or screened costs of 5 cost centers (composite rate).	Penalty per diem for late cost reports; occupancy (fixed costs only); new facilities.	Yes. Dept. of Health.
New Mexico	Level of care (SNF, ICF, ICF-MR).	Aggregate index based on CPI "All Items".	80% percentile of arrayed costs per class (weighted by patient days).	Separate treatment for reimbursement of lease costs of new facilities.	Yes. Dept. of Human Services.
New York	Type: SNF, Health related; Region: NYC, NY Sub, Upstate rural & urban; # of beds; fac. rating.	Composite index using approximately 40 cost categories, appropriately weighted based on various proxies. Oper. portion of 82 rate based on 81 base yr adjusted by 3/4 '82 and 1/2 '83 trend factor.	Base year costs trended forward; 10% cap on rate of increase or decrease in rates.	Occupancy: new facilities; ceiling for fac. 299+ beds is 110% of comparable group ceilings for 200-299 bed groups.	Yes. Dept. of Social Services (Rate Review Office).

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State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
No. Carolina	10/83	SNF & ICF. Indirect costs a prospective class rate based on arrayed fac. costs. Direct costs on indiv. fac. prospective rate based on arrayed fac. costs. ICF-MR reimbursed under Medicare formula.	Based on HIM-15.	Reimbursed as part of rate calculation.	Return on equity. Efficiency incentive difference between direct cost ceiling & actual not to exceed 10% of direct cost.
No. Dakota	10/80	Except salaries, indiv. fac. prospective rate based on aggregate facility costs. Salaries retroactively settled.	Generally HIM-15. Compensation limits. CAP on per diem salary and travel of Bd. of Dir. Depreciation controls.	Reimbursed separately.	Return on equity. Facilities with salary expense under retroactively determined upper limit may retain part of difference.
Ohio	7/84	Individual facility by cost center, A&G costs uniform class rate. Nsg. personnel, dietary, utilities, taxes individual fac. retrospective rate. Property reimbursed reasonable cost.	Based on HIM-15.	Physical and occupational therapy, social work services reimbursed as part of rate.	Return on equity. Facility may retain up to $2 PPD on A&G prospective class rate.
Oklahoma	4/84	Uniform prospective class rate based on prior year rates adjusted for inflation.	Based on HIM-15.	Reimbursed as part of rate calculation.	Providers may profit by maintaining incurred cost below prospective class rate.
Oregon	4/82	SNF & ICF individual facility retrospective rate based on arrayed aggregate costs. ICFs-MR indiv. facility retrospective rate. Interim rate based on model budget. State ICF/MR (no ceilings) cost-based.	Based on State principles in the plan.	Reimbursed separately.	Return on equity. Providers with indirect costs less than class ceiling receive up to $1 PPD.

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State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
No. Carolina	10/82	SNF & ICF. Indirect costs a prospective class rate based on arrayed fac. costs. Direct costs on indiv. fac. prospective rate based on arrayed fac. costs. ICF-MR reimbursed under Medicare formula.	Based on HIM-15.	Reimbursed as part of rate calculation.	Return on equity. Efficiency incentive to difference between direct cost ceiling & actual not to exceed 10% of direct cost.
No. Dakota	10/80	Except salaries, indiv. fac. prospective rate based on aggregate facility costs. Salaries retroactively settled.	Generally HIM-15. Compensation limits. CAP on per diem salary and travel of Bd. of Dir. Depreciation controls.	Reimbursed separately.	Return on equity. Facilities with salary expense under retroactively determined upper limit may retain part of difference.
Ohio	2/83	Individual facility by cost center, A&G costs uniform class rate. Nsg. personnel, dietary, utilities, taxes and laundry-indiv. fac. retrospective rate. Property reimbursed reasonable cost.	Based on HIM-15.	Physical and occupational therapy, social work services reimbursed as part of rate.	Return on equity. Facility may retain up to $2 PPD on A&G prospective class rate.
Oklahoma	5/83	Uniform prospective class rate based on prior year rates adjusted for inflation.	Based on HIM-15.	Reimbursed as part of rate calculation.	Providers may profit by maintaining incurred cost below prospective class rate.
Oregon	4/82	SNF & ICF individual facility retrospective rate based on arrayed aggregate costs. ICFs-MR indiv. facility retrospective rate. Interim rate based on model budget. State ICF/MR (no ceilings) cost-based.	Based on State principles in the plan.	Reimbursed separately.	Return on equity. Providers with indirect costs less than class ceiling receive $1 PPD.

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Pennsylvania	7/83	Individual facility retrospective rate based on arrayed aggregate facility costs.	For ICF-MR, psychiatric aftercare & county facilities based on HIM-15. All others based on HDA-15 except as modified by plan. Admin. cost limited to 12% of net oper. costs.	Services provided in-house or as part of arrangement are included in rate calculation.	For proprietary & nonproprietary, efficiency incentive of 8½ & 6% respectively of statewide average per diem if audited cost is less than class ceiling. Paid retrospectively.
Rhode Island	1/82	Individual facility prospective rate using base yr. subject to annual cost ceilingsand revised by annual percent adj. ICFs-MR based on Medicare formula.	Generally based on HIM-15. Compensation limits, limits on allowable interest costs, depr., etc..	Reimbursed separately.	Proprietary providers receive $.60 profit PPD in lieu ROE up to class ceiling maximum.
So. Carolina	4/83	Individual facility prospective rate which is composite of 4 cost centers & certain passthrough costs. ICFs-MR paid rate based on Medicare formula.	Generally based on HIM-15. Capital cost limit.	Restorative services reimbursed at actual cost.	Return on equity. Efficiency incentive up to 50% of difference between cost center ceiling less allowable cost, not to exceed 7.5% of cost center ceiling. Limited to $2.26 ppd.
So. Dakota	10/81	Individual facility prospective rate which is composite of 3 cost centers.	Based on HIM-15, except management fee limit, depreciation limit.	Reimbursed as part of direct patient care cost center.	Return on equity.
Tennessee	10/83	SNFs paid an individual fac. retrospective rate up to statewide ceiling. ICF, ICF-MR paid individual fac. prospective rate based on arrayed aggregate facility costs.	Generally HIM-15. Except for leases, depr., bad debts, etc. depending on level of care.	Not specified.	Return on equity up to $1.50 PPD. No ROE for MRs. Efficiency incentive (ICF) up to $1.50 PPD (proprietary) $.30 PPD (non-propr.) Total incentive & ROE not to exceed $1.60.

Appendix II

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Pennsylvania	4/83	Individual facility retrospective rate based on arrayed aggregate facility costs.	For ICF-MR, psychiatric aftercare & county facilities based on HIM-15. All others based on HDA-15 except as modified by plan.	Services provided in-house or as part of arrangement are included in rate calculation.	For proprietary & nonproprietary, efficiency incentive of 8½ & 6½ respectively of statewide average per diem if audited cost is less than class ceiling. Paid retrospectively.
Rhode Island	1/82	Individual facility prospective rate using base yr. subject to cost and revised according to annual percent adj. ICFs-MR paid rate based on Medicare formula.	Generally based on HIM-15. Compensation limits, limits on allowable interest costs, depr., etc..	Reimbursed separately.	Proprietary providers receive $.60 profit PPD in lieu ROI up to class ceiling maximum.
So. Carolina	4/83	Individual facility prospective rate which is composite of 4 cost centers & certain passthrough costs. ICFs-MR paid rate based on Medicare formula.	Generally based on HIM-15. Capital cost limit.	Restorative services reimbursed at actual cost.	Return on equity. Efficiency incentive up to 50% of difference between cost center ceiling less allowable cost, not to exceed 7.5% of cost center ceiling.
So. Dakota	10/81	Individual facility prospective rate which is composite of 5 cost centers.	Based on HIM-15, except management fee limit, depreciation limit.	Reimbursed as part of direct patient care cost center.	Return on equity.
Tennessee	8/80	SNFs paid an individual fac. retrospective rate up to statewide ceiling. ICF, ICF-MR paid individual fac. prospective rate based on arrayed aggregate facility costs.	Generally HIM-15. Except for leases, depr., bad debts, etc. depending on level of care.	Not specified.	Return on equity up to $1.50 PPD. No ROE for MRs. Efficiency incentive (ICF) up to $1.50 PPD (proprietary) $.30 PPD (non-propr.) Total incentive & ROE not to exceed $1.60.

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
Texas	9/83	Prospective class rate which is composite of 4 cost center class rates. 4 month rate freeze.	Based on State principles (includes ceiling limit).	Not specified.	None
Utah	1/83	Payment per class based on negotiated flat base rate plus 2 differential factors for property & ROE (facility specific). The 1 State facility is paid retrospectively not to exceed its appropriation.	Generally HIM-15. Provides 2 prop. differentials defines new construction. Fringe benefit limits. Compensation limits.	Not specified.	Return on equity.
Vermont	7/83	Individual facility prospective rate based on 81 rates adj. for inflation.	Generally HIM-15.	Not specified.	Return on equity.
Virginia	7/84	SNF & ICF paid individual fac. prospective rate composite of plant cost component & operating cost component, ICF-MR paid rate based on Medicare formula.	Generally HIM-15. Exceptions for owner compensation, lease, refinancing & interest expense, & legal fees.	Routine services include cost of physical, occupational & speech therapy.	Return on equity. Cost efficieney incentive (25% of diff. between cost and ceiling).
Washington	7/83	Individual facility prospective rate 1981 base year costs plus inflation.	Based on State rules in Washington Administrative Code, the cost report & cost report instructions. Compensation limits.	Not specified.	Return on equity. Retain 50-75% of savings from surpluses in property and admin. cost centers.

Appendix II

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
Texas	Level of care (SNF, ICF, ICF-MR I, V & VI) Ownership ICF-MR, State vs. other.	Increase factors derived from CPI, WPI, minimum wage & FICA taxes increases.	Cost center class rates set at 60th percentile for patient care, dietary, facility & administration.	Occupancy (facility & adminstration costs).	Yes. Dept. of Human Services.
Utah	Flat rate based on level of care (SNF, ICF, ICF-MR 1, 2, and 3 adds an intensive skilled level of care.	Flat rate base derived from cost data base, inflation indices & other economic data.	Not to exceed rate based on Medicare principles.	Not specified.	Yes. Dept. of Health.
Vermont	For 83 only IIB & FS & Vt. achievement ctr.	5.2% effective 7/83.	Cap lower of cost or fair market value	Occupancy	Yes. Nursing Home Rate-setting Comm.
Virginia	FS, HB, Intermediate and SNFs.	Based on average CPI.	Operating costs - reg ceilings plus annual escalators. Other costs - State reimburses actual cost. Limits on construction costs and profit payout. Limit on interest rate.	Occupancy new facilities, small facilities	Yes. Dept. of Health.
Washington	Property cost ceiling based on multiple regression which considers age, location and type.	Costs adj. based on amounts specified in plan.	Admin. & Operations, non-wage 85th perc. of all costs. Food 2.5% increase.	Not specified	None specified.

Appendix II

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Effective Date of Current Methodology	Type of System	Definition of Allowable Costs	Reimbursement of Ancillary Services	Opportunities for Profit
West Virginia	4/84	Individual facility prospective rate which is composite of several cost centers. Rate is recalculated semi-annually.	Based on State principles of reimbursement.	Restorative services reimbursed as part of mandated service cost center.	Return on equity. Efficiency incentive 50% of difference between ceiling costs less allowable costs.
Wisconsin	7/83	Individual facility prospective rate 1981 base year updated for inflation.	Generally HIM-15. Exceptions are minimum depreciation limits & costs of interest & leases.	Reimbursed separately.	Return on equity. Dietary, environ. service non-labor, adm. & utility cost centers get 75% of difference between ceiling less actual allowable costs.
Wyoming	1/82	Individual facility prospective rate based on arrayed aggregate facility costs. Rate recalculated semi-annually.	Depreciation expense & capitalization costs based on HIM-15. Otherwise not specified.	Reimbursed separately.	Efficiency incentive equal to difference between ceiling cost less actual allowable cost not to exceed $2 PPD.

LONG TERM CARE REIMBURSEMENT PRACTICES UNDER MEDICAID: JULY 1, 1984

State	Classification System	Economic Index	Upper Limits	Adjustments/ Exceptions	Appeals/ Review Agent
West Virginia	For standard serv. level of care (SNF, ICF); # of beds; location.	Composite index which considers semi-annual reported costs, costs of regulations, and CPI data.	Standard services mean cost. Mandated services - 90th perc. of industry wide costs. Nsg. cost - based on kind & amount. Property-reimbursed under Band of investment approach using III Trust Fund rate and FNMA.	New facilities, occupancy.	Yes. Dept. of Welfare.
Wisconsin	Level of care (SNF, ICF ICF/MR) for ICF and ICF/MR 4 levels of nursing care identified.	Non-capital costs 3%.	By cost center based on arrayed costs except nursing standard labor hours PPD established for nursing and specific services. Ceiling RN & LPN hours set at 30% of total nursing hours.	Occupancy (maintenance administration, capital, security, utility & property taxes), new facilities.	Yes. State Nursing Home Review Board
Wyoming	One statewide class for SNFs and ICFs.	½ rate of increase in CPI used to trend semi-annual rate.	84th percentile of arrayed costs for the one statewide class.	Occupancy	None specified.

Source: Health Care Financing Administration, Bureau of Eligibility, Reimbursement and Coverge.

APPENDIX III

BENEFICIARY ACCESS TO SNF CARE: INFLUENCE OF MEDICARE INTERMEDIARY COVERAGE INTERPRETATIONS AND STATE MEDICAID POLICIES

Two factors that may help explain differences in Medicare SNF utilization and bed availability are the variations in interpretations of coverage rules by Medicare's intermediaries and the influence of State Medicaid policies and certificate of need restrictions.

It is often claimed that Medicare's retrospective payment system, with its extensive cost reporting requirements, is a major deterrent to skilled nursing facility participation in Medicare and to facility admission of Medicare patients. Changing to a prospective payment system, it is argued, would increase facility participation and beneficiary access. While this change would be helpful, it probably would have only a relatively modest impact. Indeed, the existence of major interstate variations in Medicare SNF use and bed availability suggests that the factors which affect Medicare SNF benefit use and deter Medicare participation by skilled nursing facilities are not national in scope (e.g., the Medicare reimbursement system) but vary State by State.

A. Interstate Variations in Medicare SNF Use and Bed Supply

As of FY 1981, the availability of Medicare certified beds per 1,000 elderly beneficiaries ranged from a low of one in Arkansas and Oklahoma to a high of 51 in North Dakota. The national mean was 18 beds per 1,000 elderly beneficiaries. The Medicare SNF use rate (annual covered SNF days per 1,000 elderly beneficiaries) ranged from a low of one day in Wyoming to a high of 635 in Kentucky. The national

mean was 310 days per 1,000 elderly beneficiaries. Tables 52 and 53 present data on the lowest and highest State quartile of Medicare utilization.

Earlier, in the body of the report, it was noted that Medicare certified SNF beds per 1,000 elderly beneficiaries correlates only weakly with the rate of Medicare SNF use (annual covered days of care per 1,000 elderly beneficiaries). Nevertheless, there does appear to be a stronger relationship at the low end of the spectrum; that is, below average participation rates of Medicare certified beds tend to be related to below average use rates of Medicare SNF services, but the converse is not true. This suggests a "threshold" effect. Beyond a minimum number of certified beds, increasing numbers of Medicare beds certified do not produce major increases in utilization, but if certified beds per 1,000 elderly fall below the threshold, the use rate tends to drop off more precipitously. Note that in Table 52, which lists the 12 States in the lowest quartile of Medicare SNF use per 1,000 elderly, nine States are also in the lowest quartile for Medicare certified SNF beds per 1,000 elderly. (States whose bed ratios are characterized as "high" are in the highest quartile of bed availability; States whose bed ratios are characterized as "medium" are within one quartile above or below the median of certified beds per 1,000 elderly).

It is not clear, however, whether low availability of Medicare certified SNF beds produces low Medicare SNF use or whether, in fact, low use or low demand for Medicare SNF services is responsible for low participation rates. There appear to be factors other than bed availability that affect the use rate of the Medicare SNF benefit and factors other than the method of Medicare reimbursement that affect availability of Medicare certified beds. Two such factors that may help explain differences in Medicare SNF utilization and bed availability are the variations in interpretation of coverage rules by Medicare's intermediaries and the influence of State Medicaid policies.

Table 52: Characteristics of States Lowest Quartile Medicare SNF Use: FY 1981

State	Medicare SNF Days/ 1000 * Elderly	Medicare Certified Beds/1000 Elderly	Average Daily % Medicare Patients in Medicare Certified Beds	Medicaid Only SNF Beds Per 1000 Elderly	Average Daily Percent Private Pay Patients in Federally Certified Beds
Wyoming	1	4-lowest quartile	1	32 (dual SNF/ICF)	N/A
Mississippi	39	5-lowest quartile	2	34 (most dual SNF/ICF)	16
Arkansas	44	1-lowest quartile	12	28 (all SNF only)	20
Texas	68	2-lowest quartile	11	5 (almost all SNF only)	30
Alaska	75	27-highest quartile	1	17 (dual SNF/ICF)	NA
New Mexico	98	2-lowest quartile	13	0	36
Kansas	106	5-lowest quartile	6	6 (most dual SNF/ICF)	48
Minnesota	124	8-lower middle quartile	4	33 (over half dual SNF/ICF)	38
Louisiana	131	4-lowest quartile	8	0	15
Colorado	139	20-upper middle quartile	2	30 (mostly dual SNF/ICF)	29
Oklahoma	142	1-lowest quartile	32	3 (SNF only)	32
South Dakota	153	5-lowest quartile	8	0	35
	avg=93	avg-7	avg=8%		avg=30

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Table 52: Characteristics of States Lowest Quartile Medicare SNF Use: FY 1981 (Cont'd)

State	Level of Care Orientation (% Avg. Daily Patient Census at ICF Level)	Medicare SNF Avg. Per Diem Charge	Medicaid SNF Avg. Per Diem Rate	Ratio of Medicaid SNF Rate to Medicare Charge	Ratio of Avg. Fedl. Pmt/Diem M'caid to Medicare	Medicaid ICF Avg. Per Diem Rate	Ratio of Medicaid ICF Rate to SNF Rate
Wyoming	Probably ICF	$96.80	$33.71	35%	N/A	$33.71	100%
Mississippi	SNF (50)	82.20	28.79	35	49%	24.97	88
Arkansas	ICF (75)	82.80	25.53	32	63	24.65	97
Texas	Strong ICF(93)	77.86	33.65	43	53	25.46	76
Alaska	N/A	158.57	97.39	63	N/A	97.39	100
New Mexico	Strong ICF(95)	78.75	66.31	84	96	36.20	46
Kansas	Strong ICF(97)	77.39	27.80	36	41	22.16	78
Minnesota	SNF (43)	99.05	44.81	45	56	35.88	80
Louisiana	Strong ICF(97)	105.90	31.85	30	43	26.62	84
Colorado	ICF (73)	74.22	28.73	39	48	28.24	100
Oklahoma	Strong ICF(99)	167.01	26.00	16	N/A	25.00	96
South Dakota	Strong ICF(88)	75.86	26.36	35	37	23.91	91
	avg=81%	avg=$98.03	avg=$39.24	avg=41%	avg=54%	avg=$35.80	avg=86%

Source: Health Care Financing Administration, Bureau of Data Management and Strategy and Office of Research and Demonstrations.

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Table 53: Characteristics of States in Highest Quartile
Medicare SNF Use: FY 1981

State	Medicare SNF Days/ 1000 Elderly *	Medicare Certified Beds/1000 Elderly *	Average Daily % Medicare Patients in Medicare Certified Beds	Medicaid Only SNF Beds Per 1000 Elderly *	Average Daily Percent Private Pay Patients in Federally Certified Beds
Kentucky	635	11-lower middle quartile	17	0	N/A
North Dakota	601	51-highest quartile	3	0	45
Hawaii	546	23-upper middle quartile	6	0	13
Ohio	538	29-highest quartile	5	0.1 (most dual SNF/ICF)	39
Michigan	496	23-upper middle quartile	6	2 (over half dual SNF/ICF)	N/A
Pennsylvania	496	27-highest quartile	5	8 (mostly SNF only)	N/A
Illinois	487	7-lower middle quartile	19	19 (most dual SNF/ICF)	41
New Hampshire	477	6-lower middle quartile	20	0	38
Florida	437	14-lower middle quartile	8	6 (most dual SNF/ICF)	33
Oregon	434	8-lower middle quartile	15	1 (almost half dual SNF/ICF)	38
Montana	432	32-highest quartile	4	7 (most SNF only)	39
Alabama	406	32-highest quartile	3	0.2 (SNF only)	24
	avg=498	avg=22	avg=10%		avg=35

* Medicare beneficiaries aged 65 and older.

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Table 53: Characteristics of States in Highest Quartile
Medicare SNF Use: FY 1981 (Cont'd)

State	Level of Care Orientation (% Avg. Daily Patient Census at ICF Level)	Medicare SNF Avg. Per Diem Charge	Medicaid SNF Avg. Per Diem Rate	Ratio of Medicaid SNF Rate to Medicare Charge	Ratio of Avg. Fedl. Pmt/Diem M'caid to Medicare	Medicaid ICF Avg. Per Diem Rate	Ratio of Medicaid ICF Rate to SNF Rate
Kentucky	Probably ICF	66.35	42.74	64%	N/A	27.66	65
North Dakota	SNF (45)	57.31	36.35	63	97%	27.35	75
Hawaii	Mixed (55)	96.65	71.56	74	106	58.18	81
Ohio	SNF (47)	66.93	35.36	53	57	33.62	87
Michigan	Probably SNF	67.26	35.56	53	N/A	32.52	91
Pennsylvania	SNF (30)	95.23	N/A	N/A	110	N/A	N/A
Illinois	ICF (70)	88.37	32.60	37	49	22.84	90
New Hampshire	Strong ICF(95)	95.23	N/A	N/A	69	40.68	N/A
Florida	ICF (62)	67.26	N/A	N/A	61	N/A	N/A
Oregon	Strong ICF(93)	67.78	39.79	59	107	30.28	76%
Montana	Strong ICF(92)	50.89	36.75	72	83	29.64	81
Alabama	ICF (77)	43.81	30.79	70	91	24.20	79
	avg=66%	avg=$71.92	avg=$40.16	avg=57%	avg=83%	avg=$32.70	avg=78%

Source: Health Care Financing Administration, Bureau of Data Management and Strategy and Office of Research and Demonstrations.

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B. Variability in Intermediary Coverage Determinations

There are 80 separate intermediaries which review Medicare SNF claims and make coverage determinations. In addition, prior to September 30, 1981, 50 Professional Standards Review Organizations (PSROs) were also involved in making Medicare SNF coverage determinations. In order to gauge the extent of variability in decisions about Medicare SNF coverage made by these various organizations, Urban Institute researchers developed a series of hypothetical case histories which they presented to organizations having responsibility for Medicare SNF claims review. The study (Smits, et al., 1982) found considerable variation in coverage decisions among intermediaries. The results are believed to overstate the true magnitude of inter-intermediary variations, however, because the intermediaries were given brief case descriptions over the telephone, whereas actual coverage determinations are made on the basis of a review of medical records submitted with the claim. HCFA has also been apprised of instances of inter-intermediary variations in coverage decision-making by the National Council of Health Centers (a nursing home association representing chain facilities) and the American Society of Internal Medicine. These organizations have requested that HCFA undertake training sessions to reduce inter-intermediary coverage variations.

There are undoubtedly variations in intermediary coverage determinations. It remains to be determined, however, to what extent these coverage variations are legitimate reflections of geographic differences in medical practice.

Some variations in coverage decisions are believed due to the fact that a sizable minority of SNF claims fall into a "gray area" with respect to the coverage rules. In FY 1982, almost 12 percent of SNF claims denials were submitted for recon-

sideration and 21 percent of these initial denials were reversed upon reconsideration. In contrast, only 2.5 percent of inpatient hospital denials were submitted for reconsideration and 12 percent of the denials were reversed. This is largely due to the fact that Medicare covers virtually all medically necessary hospital stays, but only the small percentage of nursing home stays that meet the Medicare skilled care criteria. This suggests that the Medicare SNF benefit is more difficult to administer than the Medicare inpatient hospital benefit.

Also, in recognition that administration of the SNF benefit coverage rules necessitates the exercise of judgment, HCFA has delegated discretionary authority to the local level so that coverage decisions may better reflect regional variations in medical practice and in availability of medical resources. For example, SNF coverage may be granted if "as a practical matter" care cannot be rendered elsewhere. Judgments in these types of cases would tend to vary geographically since, for example, outpatient or at home rehabilitative services may not be available in a given locale or the length of travel to such services in rural areas may be prohibitive.

Moreover, if medical practice patterns in a State result in fewer Medicare patients discharged from the hospital who unambiguously meet Medicare SNF coverage requirements, then the result would be lower than average Medicare SNF use. The impact would be compounded if intermediaries in that State tended to judge "gray" cases more conservatively than intermediaries in another State. Under both circumstances, nursing home operators might perceive a small market for Medicare SNF services and be less inclined to seek Medicare SNF certification.

C. The Influence of State Medicaid Programs on Medicare SNF Use

The other factor that may help to explain interstate variations in Medicare SNF benefit use and availability of Medicare certified beds is external to the Medicare program. This is the influence of State Medicaid program policies on the nursing home industry in each State.

Tables 52 and 53 display the availability of Medicare certified versus Medicaid only certified SNF beds in States in the lowest and highest quartiles, respectively, of Medicare SNF benefit use per 1,000 elderly beneficiaries. The tables also display various characteristics of the Medicaid programs in these States, including prevalence of SNF versus ICF beds, average payment rates by SNF or ICF level of care, the ratio of Medicaid SNF to ICF average rates, and the ratio of average Medicaid SNF rates to average Medicare SNF charges.

State Medicaid policies in some States have produced nursing home industries that are heavily oriented toward intermediate (ICF) care. There are twice as many States in the lowest quartile of Medicare SNF bed availability (Table 52) whose Medicaid programs are strongly ICF-oriented than States in the highest quartile (Table 53). "Strong ICF" orientation is defined as an average daily Federal (Medicare and Medicaid) patient census in a State's certified beds that is more than 75 percent ICF level patients. "ICF-oriented" is defined as over 60 percent of the average daily Federal patient census at the ICF level of care. "SNF-oriented" is defined as more than 50 percent of the average daily Federal patient census at the Medicaid SNF level of care. "Mixed" orientation is defined as an average daily census of 40 to 50 percent Medicaid SNF patients. Because Medicare patients are relatively few compared to Medicaid patients, a State that certifies only a small

percentage of Medicaid patients to receive skilled level care will not be able to financially support as many skilled nursing facility beds per 1,000 elderly beneficiaries as a State which certifies a higher percentage of its Medicaid patients to receive skilled care.

A number of factors indicate strong ICF orientation in a State Medicaid program. One such factor is the percentage of total Federal patients at the ICF level. By this measure, in eight of the ten States in the lowest quartile of Medicare SNF use per 1,000, over two-thirds of the average daily census of Federal patients consists of ICF level patients. Indeed, in six of these States, the ICF orientation is so strong that the average daily census of Federal patients in nursing homes was between 88 and 99 percent ICF level patients.

Another indicator of a nursing home industry that is predominantly oriented toward ICF level care is whether all or most of the facilities are certified to provide both SNF and ICF level care in all beds. Typically, such facilities maintain sufficient staff to meet minimum SNF certification requirements, and they are paid a rate that is midway between what the facility would receive if it were certified only at the SNF or the ICF level. Under these conditions, it is financially to the facility's advantage to emphasize ICF care and take comparatively few SNF patients. Because their primary orientation is toward Medicaid ICF patients, these facilities may not be staffed appropriately to provide the intensive nursing and therapies that Medicare patients require. This may explain, at least in part, why these facilities have not sought Medicare SNF certification.

Another factor that may explain why in certain States greater percentages of facilities certified to provide Medicaid SNF care elect not to participate in Medi-

care is the differential between Medicare, private-pay, and Medicaid rates. Tables 1 and 2 indicate that, on average, States with below average Medicare SNF use also pay lower rates for Medicaid SNF care than States with above average Medicare SNF use, and the ratio of the average Medicaid SNF payment to the average Medicare charge* is also lower in States with below average Medicare SNF use (0.41 versus 0.57). Since Medicaid is the primary payor, facilities orient their staffing and services to what Medicaid reimburses. Facilities in States that pay relatively low rates for Medicaid SNF services and where the Medicaid SNF rate is low in comparison to the Medicare charge may not be staffed appropriately to care for Medicare SNF patients. In States where the Medicaid SNF rate is comparatively low, more specialization would be expected between SNFs that participate in Medicare versus Medicaid. Such specialization would, in turn, tend to result in fewer Medicare certified SNF beds per 1,000 elderly beneficiaries because the Medicare SNF population is so small.

By the same token, Tables 52 and 53 also indicate that States with below average Medicare SNF benefit use also tend to be States where the ratio of the Medicaid ICF rate to the Medicaid SNF rate is high. In other words, in these States the Medicaid program pays almost as much for ICF care as for SNF care. Under these conditions, facilities have little financial incentive to provide skilled nursing services, since the Medicare market by itself is not large enough to support many beds that would not also be used for Medicaid patients.

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* The average Medicare charge rate rather than the average Medicare reimburse ment rate is used here because charge data also serves as an indicator of private pay rates. Facilities that serve Medicare patients generally serve more private pay patients than facilities that are Medicaid certified only. Tables 52 and 53 also show the ratio of the average Federal Medicaid payment per diem. This ratio is also lower in States with below average Medicare SNF use compared to States with above average use.

D. Certificate of Need

Every state in the nation with the exception of Arizona regulates the construction of new nursing homes or the expansion of the existing bed supply. Typically, control is exercised by requiring nursing home operators to obtain "certificates of need" for new facilities or new bed from health planning agencies or from the state health department. Health planning officials approve or disapprove CON applications based on judgments of geographic need as well as overall standards that set appropriate nursing home bed/population ratios. The primary intent of CON controls on nursing home bed supply is to limit Medicaid nursing home expenditures; however, the need to obtain CON approval for any nursing home bed supply expansion also constrains nursing home operators from expanding Medicare bed supply via new construction. Operators do not require CON approval in order to obtain Medicare certification for existing Medicaid certified beds.

Currently, availability of Medicare certified SNF beds per 1000 elderly varies from a low of 1 to a high of 51. Since most SNFs are fully occupied, pressure exists for added capacity, and with the restrictive CON policies that apply to the construction of SNF beds, many hospitals are exploring step down units and expanded swing bed capacity.

E. Conclusion

Clearly, no one single factor has a decisive impact on Medicare SNF use and facility participation in Medicare. Rather, the factors interact with one another and influence both the use rate of SNF services and the decision of a nursing home

operator to seek certification first as a SNF and then as a Medicare only, a Medicaid only, or a dually certified facility. Because, however, several of these factors are external to Medicare or have to do primarily with Medicare coverage rather than reimbursement policies, it is unlikely that minimum changes in Medicare SNF reimbursement would bring about large increases in Medicare certified SNF beds or the use rate of the Medicare SNF benefit.

Some are beginning to suggest that more major changes like a combined payment for the acute and subacute institutional stay may bring about increased use of the Medicare SNF benefit in a manner which ensures that the subacute services do in fact substitute for acute services.

APPENDIX IV

"HOSPITAL BACK-UP"

One argument that is frequently advanced in favor of prospective payment for Medicare SNFs is that prospective payment would act as an incentive to nursing homes to serve more Medicare patients, thereby reducing the problem of hospital back-up and its associated costs. Most experts believe, however, that independent of changes in SNF reimbursement, the new Medicare hospital prospective payment system contains financial incentives for hospitals to seek more and faster nursing home placements for patients who no longer require an acute level of care. The result is likely to be increased use of the Medicare SNF benefit and a reduction of hospital back-up among patients who qualify for the Medicare SNF level of care. Because of nursing home bed supply constraints, however, hospital back-up of hard-to-place Medicaid patients, who are the largest share of the back-up population and those with the longest stays, may increase. This appendix discusses the hospital back-up problem as it has developed and been treated historically, the anticipated impact of Medicare hospital reimbursement reform, and problems in estimating the size and scope of the back-up problem as it affects Medicare versus Medicaid patients.

"Hospital back-up" is the term colloquially used to describe the phenomenon of Medicare and Medicaid patients who no longer require hospital care but remain hospitalized because they are awaiting nursing home placement. Because the hospital stay is no longer medically necessary at the acute level, the days spent by such patients awaiting nursing home placement are also often referred to as "inappropriate" or "unnecessary" hospital days. When utilization review procedures have determined that hospital care is no longer medically necessary and Medicare

or Medicaid continue to pay for hospital care (whether at the full acute care rate or some lower payment rate) pending placement of the patient in a nursing home, the time spent in the hospital awaiting nursing home placement is termed "administratively necessary days" (ANDs) or "alternate placement days."

It is important to bear in mind, however, that Medicare will only pay for alternate placement days for patients who are judged to require skilled nursing care as defined by Medicare; that is, placement in a Medicare certified SNF or Medicare financed skilled home health care. Patients awaiting a lower level of nursing home (e.g., intermediate care facility) care are not covered. In many, but not all, States, Medicaid will pay for alternate placement days for individuals awaiting Medicaid skilled nursing or intermediate care facility placements, but only if the individual has already established Medicaid eligibility. Many Medicaid nursing home patients do not establish Medicaid eligibility until after they have entered a nursing home, typically because they must exhaust their savings to pay for nursing home care ("spend-down") in order to qualify for Medicaid. Often there is a fixed limit on the number of alternate placement days a State Medicaid program will reimburse.

It is believed that some, perhaps many, Medicare patients awaiting nursing home placement may be certified as needing Medicare SNF level care and thus eligible for alternate Medicare placement day payments when, in fact, if the case were submitted to an intermediary for an actual coverage determination, coverage might be denied. This is an inference based on the observation that the number of patients receiving ANDs, by some estimates, appears disproportionate to historic use of the Medicare SNF benefit.

A. Scope of Hospital Back-up Nationwide

No reliable study of the size and scope of hospital back-up exists. Two sources of nationwide estimates are available, however. First, PSRO one-day "snapshot" surveys of the numbers of patients in AND status were carried out in 1979 and 1980. (Health Standards and Quality Bureau, HCFA, 1979 and American Association of Professional Standards Review Organizations, 1980). Feder and Scanlon (1981) summarized the results of these surveys as a range of 0.24 million to 1.80 million administratively necessary days per quarter, which extrapolates into 1.0 million to 7.2 million administratively necessary days per year (as of FY 1980). Methodological critiques of the one-day "snapshot" suggest, however, that one-day surveys in general, and the 1979 and 1980 surveys, in particular, are flawed. To the extent that the day chosen for the "snapshot" is typical, this method can provide a good estimate of the number of patients awaiting placement. The disadvantage of a snapshot survey is that if the data are used to estimate delays of "typical" patients who become ready for discharge on a given day, the resulting estimate is severely biased: the average delay of persons found in the snapshot is significantly greater than the average delay of a typical person being discharged because the short stay patients are undermeasured. (Gruenberg and Willemain, 1982).

In addition, the 1979 and 1980 PSRO one-day AND surveys have several specific methodological flaws. Not all PSROs nationwide participated in the surveys, although the participation rate (86 percent in 1980) was high. Also, the surveys did not distinguish between Medicare and Medicaid patients on AND status. Moreover, because the surveys were focused on the general issue of inappropriate hospital utilization, they did not distinguish patients awaiting discharge to their own home or some other community placement. Thus, the number of individuals reported is

an overestimate of individuals awaiting nursing home placement. Similarly, the surveys do not distinguish between persons who would qualify for Medicare SNF coverage and those needing a lower level of nursing home care.

A second source of estimates concerning hospital back-up or inappropriate use of hospital care by persons requiring nursing home care (as opposed to "administratively necessary days") is an actuarial cost model for Federal long term care programs developed by ICF, Incorporated, under contract to the Health Care Financing Administration. The data on Medicare and Medicaid utilization and expenditures used in the model are from FY 1977 for Medicaid and FY 1978 for Medicare. Depending on the assumptions made about nursing home bed supply, the ICF actuarial model estimates the number of days of inappropriate hospital care used by Medicare and Medicaid patients awaiting nursing home placement during FY 1980 as ranging from 697,000 to 1,005,000. The ICF model's projections are lower than estimates based on the PSRO one-day surveys of administratively necessary days. Indeed, the upper bound of the ICF estimate is virtually the same as the lower bound of the range cited by Feder and Scanlon based on their extrapolation of the PSRO survey data.

In the ICF actuarial model of long term care utilization, the projection of inappropriate hospital use by Medicare and Medicaid patients awaiting nursing home placement emerges as the residual difference between estimated need and demand for long term care by persons eligible for Medicare and Medicaid covered services and the supply of long term care (LTC) services of various types available to Medicare and Medicaid eligibles.

ICF estimated the underlying need for LTC services by applying a modified version of the Geriatric Functional Rating Scale (GFRS) to data from the 1977 Health Interview Survey, 1977 National Nursing Home Survey (NNHS), and 1976 Survey of Institutionalized Persons (SIP) to assess the proportion of persons in different age and sex cohorts needing various LTC services.

A criticism of the ICF model regards its assumptions concerning nursing home bed supply. ICF was unable to obtain reliable data on changes in nursing home bed supply and was, hence, unable to predict with any degree of confidence the future supply of nursing home beds available to Medicare and Medicaid patients. Accordingly, ICF made the assumption that the nursing home bed supply would remain constant at the 1978 level and employed days of care reimbursed in 1978 as a measure of the beds available to Medicare and Medicaid patients. This "no growth" assumption is questionable, particularly as it would affect out-year projections. A recent survey of nursing home bed supply by the General Accounting Office found that nursing home bed supply (Medicare/Medicaid certified beds) grew by 2.9 percent per year from 1976 to 1980 (GAO, 1983). It is not clear, however, to what extent such a growth in certified beds should be expected to translate into bed use by Federal patients. Currently, the percent of Medicare and Medicaid certified nursing home beds actually in use, on an average daily basis, by Medicare/Medicaid patients ranges from a high of 85 percent in Louisiana to a low of 45 percent in Nebraska.

To adjust for the effects of differing assumptions about the availability of nursing home beds on inappropriate use of hospital care by Medicare and Medicaid eligibles requiring nursing home care, the model was reprogrammed to generate estimates based on alternate supply assumptions in addition to the original constant supply

assumption: a two percent per year decrease in bed supply 1978-1990, a two percent per year increase, a three percent per year increase, and a four percent per year increase.

The varying estimates of inappropriate hospital use by Medicare and Medicaid patients requiring nursing home care that are generated by the five supply assumptions are listed in Table 54. The estimate of Medicare days in Table 54 refers to days of hospital care used by individuals awaiting placement at the Medicare SNF level and, correspondingly, the Medicaid days of care estimate refers to the days of care used by Medicaid eligible individuals awaiting placement at the Medicaid SNF or ICF level of care.

Note also that the ICF model projects a major increase in numbers of hospital back-up days between 1985 and 1990. Even so the total hospital back-up days (Medicare and Medicaid) projected by the model as of 1990 is only slightly higher than the total number of such days estimated to have actually occurred in 1980 on the basis of the PSRO one-day snapshot survey. This simply underscores the fact that existing data sources provide estimates having a considerable range of variation; hence, it is not currently possible to gauge with any appreciable degree of certainty the size and scope of the hospital back-up phenomenon.

B. Medicare versus Medicaid Back-up

The ICF model clearly suggests that hospital back-up is primarily a phenomenon that affects persons who require nursing home care that would be covered by Medicaid rather than Medicare. In 1980, according to the ICF model, for every day

Table 54: Projections of Hospital Back-up Days for Medicare and Medicaid Patients Requiring Nursing Home Care Under Differing Assumptions Concerning Nursing Home Bed Supply: 1980, 1985, 1990

Nursing Home Bed Supply Assumption	Medicare Days (thousands)			Medicaid Days (thousands)		
	1980	1985	1990	1980	1985	1990
Decreasing 2% per year (after 1978)	152	329	1,583	853	2,004	8,599
Constant (at 1978 level)	125	238	1,431	775	1,721	7,934
Increasing 2% per year (after 1978)	101	142	1,240	696	1,425	7,047
Increasing 3% per year (after 1978)	90	101	1,129	656	1,266	6,650
Increasing 4% per year (after 1978)	81	68	1,005	616	1,097	6,048

Source: Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, using an actuarial model designed originally by ICF, Inc., adjusted for more recent data.

of hospital care provided to persons awaiting Medicare SNF placement, there were an estimated six to seven days of inappropriate hospital care provided to persons awaiting a Medicaid nursing home placement.

Studies of the hospital back-up problem in particular hospitals and geographic areas (e.g., NYCHSRO, 1982; Gruenberg and Willemain, 1982) have also found that persons most likely to experience long delays in obtaining nursing home placement are persons with mental/behavioral problems, persons with multiple "activities of daily living" (ADL) dependencies who are therefore likely to require above average nursing time, and patients whose nursing home stay will be Medicaid financed.

C. Cost Implications of Hospital Back-up

Tables 55 and 56 provide estimates of the costs associated with inappropriate hospital use by Medicare and Medicaid patients requiring nursing home care based on the ICF model. It assumes that the costs of the hospital days used by persons needing Medicare SNF care will be borne by Medicare and the costs of hospital days used by persons requiring Medicaid SNF or ICF care will be borne by Medicaid. The model also assumes that each program will pay for these days of care at the acute care per diem rate. In other words, the estimates do not take into account prospective payment for Medicare.

Under the three percent bed growth assumption (currently believed to be the most likely), Medicare hospital back-up costs for individuals awaiting Medicare SNF placements are projected to be approximately $15 million in FY 1985. Medicaid costs for persons awaiting placement at lower levels of care are projected to reach $170 million the same year.

Table 55: **Estimated Medicare Expenditures Resulting from Back-up Days for Persons Requiring Medicare SNF Care**

Nursing Home Bed Supply Assumption	1980	1985	1990
		(thousands of dollars)	
Decreasing 2% per (year after 1978)	$14,197	$46,784	$329,264
Constant (at 1978 level)	11,673	33,848	297,309
Increasing 2% per year (after 1978)	9,433	20,192	257,920
Increasing 3% per year	8,404	14,790	234,561
Increasing 4% per year	7,646	9,670	209,040

Source: ICF, Inc. and Assistant Secretary for Planning and Evaluation, Department of Health and Human Services.

Table 56: Estimated Medicaid Costs Associated with Medicaid Nursing Home Patients Backed-up in Hospitals

Nursing Home Bed Supply Assumption	1980	1985	1990
		(thousands of dollars)	
Decreasing 2% per (year after 1978)	$ 73,033	$269,558	$1,735,278
Constant (at 1978 level)	66,359	231,497	1,601,043
Increasing 2% per year (after 1978)	59,591	191,676	1,422,085
Increasing 3% per year	56,173	170,290	1,323,808
Increasing 4% per year	52,741	147,557	1,220,486

Source: ICF, Inc. and Assistant Secretary for Planning and Evaluation, Department of Health and Human Services.

However, these estimates of the projected Medicare costs are probably too high. The estimate is based on the previous retrospective per diem payment system for hospital reimbursement. Under the current hospital prospective payment system, based on diagnosis related groups (DRGs), no additional payments are made for alternate placement days until after a patient's length of stay has reached the outlier threshold point for the DRG-based case payment. Thus, all cases in a given DRG are paid the same regardless of length of stay as long as it is within the threshold and regardless of whether or not a patient could have been discharged earlier had a Medicare SNF bed been available. The reason for this is because the DRG per case rate is calculated based on a data base of costs per average length of stay. Thus, under the DRG system, hospitals have a financial motivation to find nursing home placements for patients as soon as those patients can appropriately be cared for at a lower level of care.

Moreover, Medicare will not achieve any program savings from more rapid placement of patients in nursing homes prior to the outlier threshold. Once the outlier threshold is reached and Medicare begins to pay an additional per diem payment for alternate placement days, the rate is lower under prospective payment than it was under the previous retrospective payment system. In sum, while the prospective payment system for hospitals gives hospitals financial incentives to reduce hospital back up of long-stay patients and reduces the associated per diem costs, it does not eliminate the phenomenon entirely.

Thus, the estimate reflects the continued payment for alternate placement days at the acute care rate. The ICF model provides an estimate of what alternate placement days for persons awaiting Medicare SNF placements would have cost Medicare in 1985 and 1990 if ANDs were to be paid at the acute care rates if the retrospective per diem hospital payment system had remained in effect.

The estimated Medicaid costs for beneficiaries awaiting Medicaid-covered nursing home care may also be too high. Medicaid varies from State to State in the number of ANDs it will pay for and the rate of payment. Prior to 1980, only 15 States reimbursed hospitals at the acute care rate for administratively necessary days under Medicaid. Since 1980, most States that pay for ANDs under Medicaid have switched to a system that reimburses for these days at the average nursing home (SNF or ICF) rate. The ICF model attributes the costs of inappropriate days of hospital care at levels that are eligible only for Medicaid coverage (because the Medicaid program covers lower levels of nursing home care than the Medicare program) to Medicaid. However there is reason to believe that a significant, but unknown, percentage of such days are never formally identified as ANDs and were, prior to hospital prospective payment, covered mostly by Medicare as part of the patient's Medicare-covered hospital stay. However, for purposes of estimating the size and costs of hospital back-up created by lack of access to the Medicare SNF beds, problems with the ICF model's estimate of Medicaid back-up costs are not significant since regardless of whether Medicare or Medicaid pays for the ANDs these individuals are not medically eligible for Medicare SNF services.

D. Impact of Hospital Prospective Payment on Back-up and on Use of the Medicare SNF Benefit

The Medicare DRG-based per case prospective payment system for hospital care may have the effect of sharply reducing hospital back-up of patients requiring Medicare SNF care and increasing the use of Medicare SNF services. By paying on a per case basis, the Medicare hospital prospective payment system creates powerful financial incentives for hospitals to decrease the length of acute care stays and to seek Medicare SNF placements aggressively for Medicare patients. If

hospitals discharge patients sooner than has previously been the case, then a higher proportion of discharges may be able to satisfy the Medicare skilled care coverage requirements, which would tend to increase the use rate of the Medicare SNF benefit. In order to overcome placement problems, hospitals may engage in one or both of the following strategies: 1) convert excess hospital beds into certified long term care beds either by establishing hospital-based SNFs or (in rural areas) swing beds, and 2) contract with existing Medicare certified SNFs in the community to hold open beds for Medicare SNF patients. The first strategy would likely increase the total availability of certified SNF beds in the community and, as such, it may ameliorate problems with access to SNF beds on the part of both Medicare and Medicaid patients. Under the second strategy increased access of Medicare SNF patients to SNF beds would displace Medicaid patients.

At this point, however, it is impossible to predict with any appreciable degree of certainty how Medicare SNF benefit use will be affected by hospital prospective payment.

E. Policy Implication

Because hospital back-up primarily affects individuals whose nursing home placement will be Medicaid financed, the policy implication is that completely eliminating the Medicare component of hospital back-up would, according to the model, only reduce ANDs by about 14 percent. Moreover, since under prospective payment which covers most Medicare hospital payments, ANDs are not identified and differentially reimbursed until the length of stay outlier threshold is reached, the cost savings resulting from eliminating back-up of patients awaiting Medicare SNF placement is likely to be marginal. Table 54 indicates that Medicare back-up

is projected to become more costly in the out-years. This is due to an overall shortage of SNF beds relative to demand based on aging of the population which is further exacerbated by restrictive certificate of need policies and a current reimbursement system that penalizes a facility for taking a heavy care patient. Thus, we have a current system that does not promote the appropriate placement of a Medicare patient and facilitate the movement between the acute and subacute parts of an institutional stay.

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